



STIC Search Report

EIC 1700

STIC Database Tracking Number: 93818

TO: Amanda Walke
Location: CP3 9B30
May 7, 2003

Case Serial Number: 09/942768

From: Kathleen Fuller
Location: EIC 1700
CP3/4 3D62
Phone: 308-4290

Kathleen.Fuller@uspto.gov

Search Notes

SEARCH REQUEST FORM**Scientific and Technical Information Center**

Requester's Full Name: Amanda Walker Examiner #: 75643 Date: 5/6/2003
 Art Unit: 1152 Phone Number 305-0407 Serial Number: 101942768
 Mail Box and Bldg/Room Location: C03 9B50 Results Format Preferred (circle): PAPER DISK E-M

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): Yenishi, Kazuya

Earliest Priority Filing Date: 8/31/2002

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search for a resin comprising formula (1) - this is very broad so there are too many hits, then formula (2). (Preliminary Comment: I.C. it is still a broad search then it may be narrowed by searching for the resin w/ compd of one of formulas (I), (II), or (III). Thank you.

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher: <u>K. Fuller</u>		NA Sequence (#)	STN <u>/</u>
Searcher Phone #:		AA Sequence (#)	Dialog _____
Searcher Location:		Structure (#)	<u>4</u> Questel/Orbit _____
Date Searcher Picked Up:		Bibliographic	Dr. Link _____
Date Completed: <u>5/26/03</u>		Litigation	Lexis/Nexis _____
Searcher Prep & Review Time: <u>201</u>		Fulltext	Sequence Systems _____
Clerical Prep Time:		Patent Family	WWW/Internet _____
Online Time: <u>45</u>		Other	Other (specify) _____

EIC1700

Search Results

Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search *or contact:*

Kathleen Fuller, Team Leader, 308-4290, CP3/4 3D62

Voluntary Results Feedback Form

➤ *I am an examiner in Workgroup:* Example: **1713**

➤ *Relevant prior art found, search results used as follows:*

- 102 rejection
- 103 rejection
- Cited as being of interest.
- Helped examiner better understand the invention.
- Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- Foreign Patent(s)
- Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- Results verified the lack of relevant prior art (helped determine patentability).
- Search results were not useful in determining patentability or understanding the invention.

Other Comments:

=> FILE REG
FILE 'REGISTRY' ENTERED AT 16:05:14 ON 07 MAY 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 6 MAY 2003 HIGHEST RN 511508-58-0
DICTIONARY FILE UPDATES: 6 MAY 2003 HIGHEST RN 511508-58-0

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

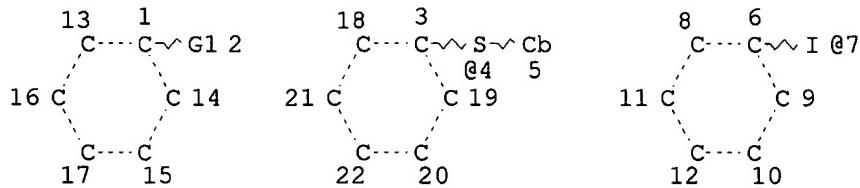
=> FILE HCPLUS
FILE 'HCPLUS' ENTERED AT 16:05:19 ON 07 MAY 2003
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FILE COVERS 1907 - 7 May 2003 VOL 138 ISS 19
FILE LAST UPDATED: 6 May 2003 (20030506/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE L33
L4 112 SEA FILE=REGISTRY ABB=ON 620-18-8/CRN
L12 48 SEA FILE=REGISTRY ABB=ON 51985-06-9/CRN
L24 STR



VAR G1=4/7

NODE ATTRIBUTES:

CONNECT IS E3 RC AT 4

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 22

STEREO ATTRIBUTES: NONE

L26 4697 SEA FILE=REGISTRY SSS FUL L24
 L27 160 SEA FILE=REGISTRY ABB=ON L12 OR L4
 L29 5909 SEA FILE=HCAPLUS ABB=ON L26
 L30 172 SEA FILE=HCAPLUS ABB=ON L27
 L31 53 SEA FILE=HCAPLUS ABB=ON L29 AND L30
 L32 14787 SEA FILE=HCAPLUS ABB=ON NEG?(3A)?RESIST?
 L33 25 SEA FILE=HCAPLUS ABB=ON L31 AND L32

=> D L33 ALL 1-25 HITSTR

L33 ANSWER 1 OF 25 HCAPLUS COPYRIGHT 2003 ACS
 AN 2003:272171 HCAPLUS

TI Negative-working resist composition containing
 alicyclic compound for x-ray and electron beam
 IN Takahashi, Omote; Yasunami, Shoichiro; Adegawa, Yutaka
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokyo Koho, 94 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-038

ICS C07C031-137; C07C035-31; C07C035-37; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 24

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003107705	A2	20030409	JP 2001-302633	20010928
PRAI	JP 2001-302633		20010928		

AB The neg.-working resist compn. comprises (A) a photoacid, (B) an alkali-sol. resin, (C) a compd. having an alicyclic ring and generating water upon the interaction with an acid, and (D) a basic compd. The use of the alicyclic compd. provided both high sensitivity and high resoln.

ST resist compn contg alicyclic compd x ray electron beam

IT Electron beam resists

Photoresists

Resists

X-ray resists

(neg.-working resist compn. contg. alicyclic compd.
for x-ray and electron beam)

IT 80-04-6 87-89-8 98-52-2 100-97-0 479-59-4 484-47-9 529-32-8
 556-48-9 668-94-0 707-37-9 768-95-6 775-64-4 824-13-5
 1194-21-4 1194-44-1 1632-68-4 2041-15-8 3001-72-7 4975-73-9
 4985-24-4 5001-18-3 5807-14-7 6674-22-2 10347-01-0 10385-78-1
 20534-58-1 **24979-69-9**, 3-Hydroxystyrene homopolymer
 24979-70-2, p-Hydroxystyrene homopolymer 24979-74-6,
 4-Hydroxystyrene-styrene copolymer 24980-18-5, o-Hydroxystyrene
 homopolymer 31818-42-5 34413-35-9 76921-55-6 84030-20-6
 145819-91-6 **149614-53-9**, 3-Hydroxystyrene-4-Hydroxystyrene
 copolymer 161679-94-3 171429-59-7 185502-14-1 321164-59-4
396098-38-7 473273-00-6 **477705-24-1**

RL: TEM (Technical or engineered material use); USES (Uses)
(neg.-working resist compn. contg. alicyclic compd.
for x-ray and electron beam)

IT 241806-75-7 241806-76-8 258341-99-0
 258872-05-8 312386-77-9 338445-31-1
 341548-86-5 343629-51-6 437652-80-7
437652-81-8

RL: CAT (Catalyst use); USES (Uses)
(photoacid; neg.-working resist compn. contg.
alicyclic compd. for x-ray and electron beam)

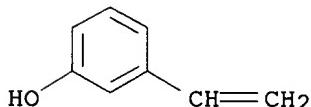
IT **24979-69-9**, 3-Hydroxystyrene homopolymer **149614-53-9**,
 3-Hydroxystyrene-4-Hydroxystyrene copolymer **396098-38-7**.
477705-24-1

RL: TEM (Technical or engineered material use); USES (Uses)
(neg.-working resist compn. contg. alicyclic compd.
for x-ray and electron beam)

RN 24979-69-9 HCPLUS

CN Phenol, 3-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

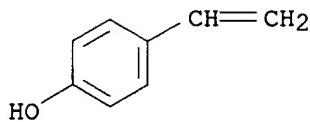
CRN 620-18-8
CMF C8 H8 O

RN 149614-53-9 HCPLUS

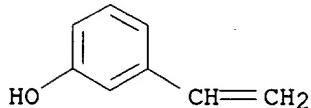
CN Phenol, 3-ethenyl-, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 2628-17-3
CMF C8 H8 O



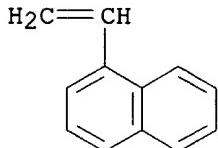
CM 2

CRN 620-18-8
CMF C₈ H₈ O

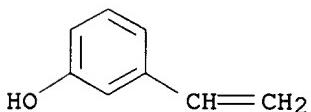
RN 396098-38-7 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 1-ethenylnaphthalene (9CI) (CA INDEX NAME)

CM 1

CRN 826-74-4
CMF C₁₂ H₁₀

CM 2

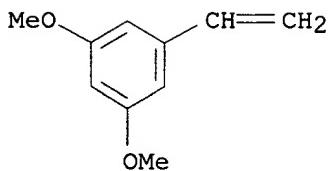
CRN 620-18-8
CMF C₈ H₈ O

RN 477705-24-1 HCPLUS

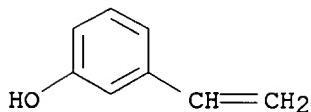
CN Phenol, 3-ethenyl-, polymer with 1-ethenyl-3,5-dimethoxybenzene (9CI) (CA INDEX NAME)

CM 1

CRN 40243-87-6
CMF C₁₀ H₁₂ O₂



CM 2

CRN 620-18-8
CMF C8 H8 O

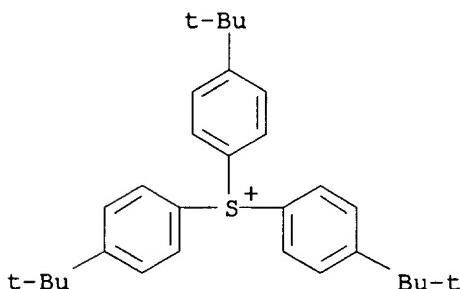
IT 241806-75-7 241806-76-8 258341-99-0
 258872-05-8 312386-77-9 338445-31-1
 341548-86-5 343629-51-6 437652-80-7
 437652-81-8

RL: CAT (Catalyst use); USES (Uses)
 (photoacid; neg.-working resist compn. contg.
 alicyclic compd. for x-ray and electron beam)

RN 241806-75-7 HCPLUS

CN Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, salt with
 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX
 NAME)

CM 1

CRN 91815-56-4
CMF C30 H39 S

CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

$\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

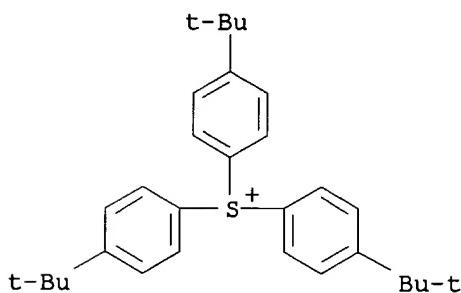
RN 241806-76-8 HCPLUS

CN Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 91815-56-4

CMF C30 H39 S



CM 2

CRN 45298-90-6

CMF C8 F17 O3 S

$\text{-O}_3\text{S-}(\text{CF}_2)_7\text{-CF}_3$

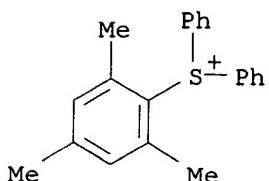
RN 258341-99-0 HCPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6

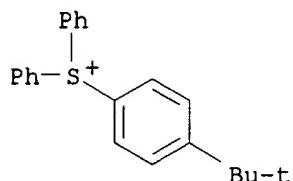
CMF C21 H21 S



CM 2

CRN 45298-90-6
CMF C8 F17 O3 S-O₃S-(CF₂)₇-CF₃RN 258872-05-8 HCAPLUS
CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with
1,1,2,2,3,3,4,4-nonafluoro-1-butanесulfonic acid (1:1) (9CI) (CA INDEX
NAME)

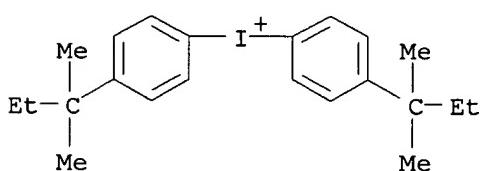
CM 1

CRN 66482-54-0
CMF C22 H23 S

CM 2

CRN 45187-15-3
CMF C4 F9 O3 S-O₃S-(CF₂)₃-CF₃RN 312386-77-9 HCAPLUS
CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
1,1,2,2,3,3,4,4-nonafluoro-1-butanесulfonic acid (1:1) (9CI) (CA INDEX
NAME)

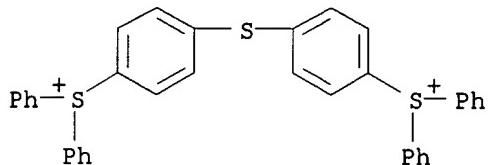
CM 1

CRN 249300-51-4
CMF C22 H30 I

CM 2

CRN 45187-15-3
CMF C4 F9 O3 S-O₃S-(CF₂)₃-CF₃RN 338445-31-1 HCPLUS
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:2) (9CI) (CA INDEX
NAME)

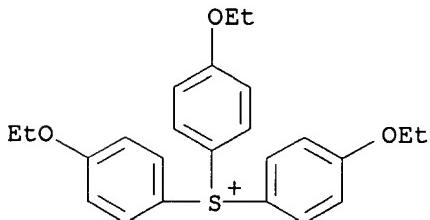
CM 1

CRN 74227-34-2
CMF C36 H28 S3

CM 2

CRN 45187-15-3
CMF C4 F9 O3 S-O₃S-(CF₂)₃-CF₃RN 341548-86-5 HCPLUS
CN Sulfonium, tris(4-ethoxyphenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-
butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 220391-62-8
CMF C24 H27 O3 S

CM 2

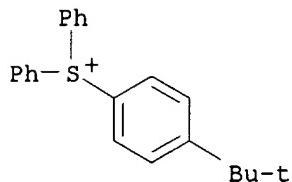
CRN 45187-15-3
 CMF C4 F9 O3 S

 $\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

RN 343629-51-6 HCPLUS
 CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with
 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-1-octanesulfonic acid
 (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 66482-54-0
 CMF C22 H23 S



CM 2

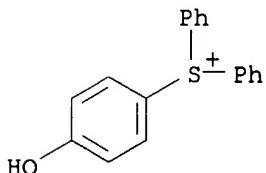
CRN 45298-90-6
 CMF C8 F17 O3 S

 $\text{-O}_3\text{S-}(\text{CF}_2)_7\text{-CF}_3$

RN 437652-80-7 HCPLUS
 CN Sulfonium, (4-hydroxyphenyl)diphenyl-, salt with
 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-1-octanesulfonic acid
 (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 108493-51-2
 CMF C18 H15 O S



CM 2

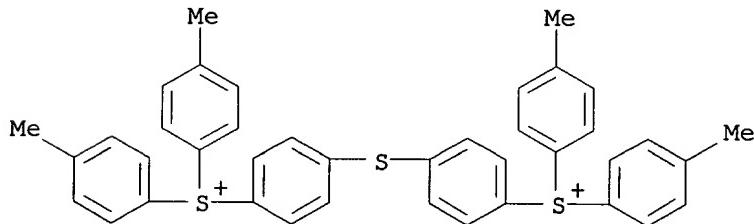
CRN 45298-90-6
 CMF C8 F17 O3 S

-O₃S-(CF₂)₇-CF₃

RN 437652-81-8 HCPLUS
 CN Sulfonium, (thiodi-4,1-phenylene)bis[bis(4-methylphenyl)-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heneicosfluoro-1-decanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 222722-48-7
 CMF C40 H36 S3



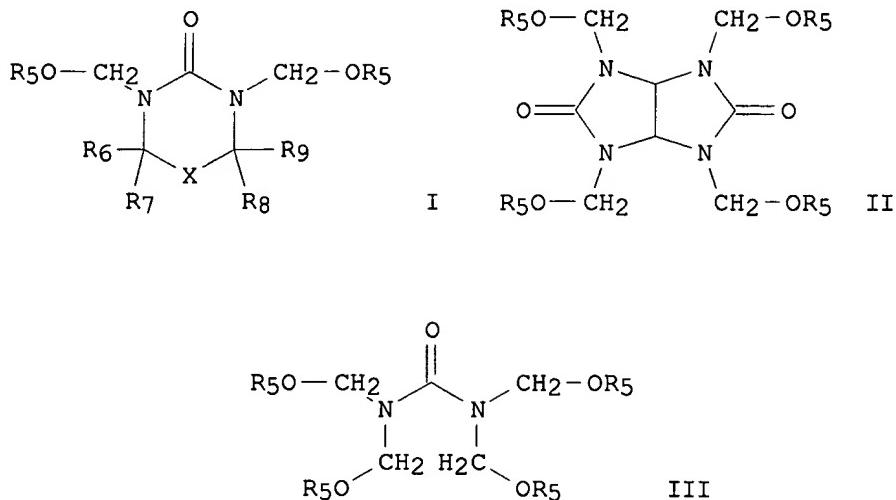
CM 2

CRN 126105-34-8
 CMF C10 F21 O3 S

-O₃S-(CF₂)₉-CF₃

L33 ANSWER 2 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2003:272170 HCPLUS
 TI Negative-working resist composition for x-ray and electronic beam
 IN Takahashi, Omote; Yasunami, Shoichiro; Adegawa, Yutaka
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 41 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-038
 ICS H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38, 25
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003107704	A2	20030409	JP 2001-301492	20010928
PRAI JP 2001-301492		20010928		
GI				



- AB The neg.-working **resist** compn. comprises (a) a photoacid, (b) a crosslinker activated by an acid, and (c) an alkali-sol. resin represented by [H₂C-CR₀(L-C₆R₁R₂R₃R₄O_H)] (R₀ = H, Me; L = divalent bonding group; and R₁₋₄ = alkyl, alkoxy, acetoxy, etc.). The crosslinker may be represented by I, II, or III (R₅ = H, alkyl, acyl; R₆₋₉ = H, OH, alky, etc.; and X = single bond, methylene, O). The compn. further contains a basic compd.
- ST x ray electron beam resist compn; photoacid crosslinker alkali sol resin basic compd resist compn
- IT Electron beam **resists**
X-ray resists
 (neg.-working **resist** compn. for x-ray and electronic beam)
- IT 31872-14-7 508220-50-6 **508220-51-7** 508220-52-8 508220-54-0
 508220-56-2 508220-58-4 508220-61-9 508220-62-0 508220-64-2
 508220-66-4 508220-68-6
 RL: TEM (Technical or engineered material use); USES (Uses)
 (alkali-sol. resin; neg.-working **resist** compn. for x-ray and electronic beam)
- IT 100-97-0, Hexamethylenetetramine 110-89-4, Piperidine 280-48-8
 484-47-9, 2,4,5-Triphenylimidazole 1122-58-3, 4-Dimethylaminopyridine 3001-72-7 24544-04-5, 2,6-Diisopropylaniline 122936-95-2
 RL: TEM (Technical or engineered material use); USES (Uses)
 (basic compd.; neg.-working **resist** compn. for x-ray and electronic beam)
- IT 5395-50-6 13747-15-4 17464-88-9 65952-06-9 508220-69-7
 508220-70-0 508220-71-1
 RL: TEM (Technical or engineered material use); USES (Uses)
 (crosslinker; neg.-working **resist** compn. for x-ray and electronic beam)
- IT 138529-81-4 138529-84-7 **144317-44-2 240424-21-9**

241806-75-7 241806-76-8 258341-99-0
 258872-05-8 312386-77-9 338445-31-1
 341548-86-5 343629-51-6 437652-80-7
 437652-81-8

RL: CAT (Catalyst use); USES (Uses)
 (photoacid; neg.-working resist compn. for x-ray
 and electronic beam)

IT 244057-73-6P

RL: PNU (Preparation, unclassified); PREP (Preparation)
 (prepn. of photoacid for neg.-working resist
 compn.)

IT 79-30-1, Iso-butyric acid chloride 123-30-8, p-Aminophenol 127-09-3,
 Sodium acetate 110726-28-8, Trisp-PA

RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of photoacid for neg.-working resist
 compn.)

IT 508220-51-7

RL: TEM (Technical or engineered material use); USES (Uses)
 (alkali-sol. resin; neg.-working resist compn. for
 x-ray and electronic beam)

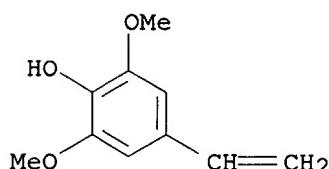
RN 508220-51-7 HCPLUS

CN Phenol, 4-ethenyl-2,6-dimethoxy-, polymer with 3-ethenylphenol (9CI) (CA
 INDEX NAME)

CM 1

CRN 28343-22-8

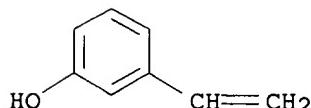
CMF C10 H12 O3



CM 2

CRN 620-18-8

CMF C8 H8 O



IT 144317-44-2 240424-21-9 241806-75-7
 241806-76-8 258341-99-0 258872-05-8
 312386-77-9 338445-31-1 341548-86-5
 343629-51-6 437652-80-7 437652-81-8

RL: CAT (Catalyst use); USES (Uses)
 (photoacid; neg.-working resist compn. for x-ray
 and electronic beam)

RN 144317-44-2 HCPLUS

CN Sulfonium, triphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 45187-15-3

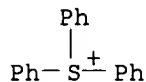
CMF C4 F9 O3 S

 $\text{-O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$

CM 2

CRN 18393-55-0

CMF C18 H15 S



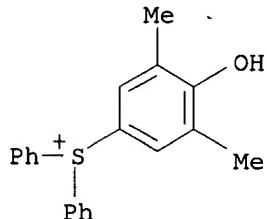
RN 240424-21-9 HCPLUS

CN Sulfonium, (4-hydroxy-3,5-dimethylphenyl)diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 127279-85-0

CMF C20 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $\text{-O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$

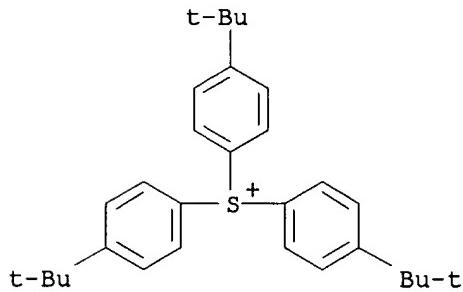
RN 241806-75-7 HCPLUS

CN Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, salt with

1,1,2,2,3,3,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 91815-56-4
CMF C30 H39 S



CM 2

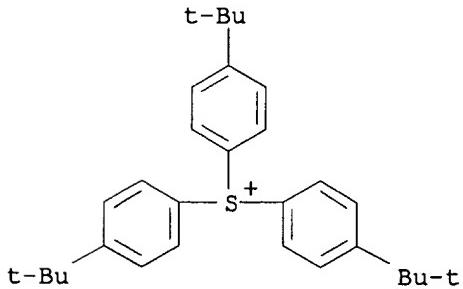
CRN 45187-15-3
CMF C4 F9 O3 S

$\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

RN 241806-76-8 HCPLUS
CN Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 91815-56-4
CMF C30 H39 S



CM 2

CRN 45298-90-6

CMF C8 F17 O3 S

 $\text{-O}_3\text{S-}(\text{CF}_2)_7\text{-CF}_3$

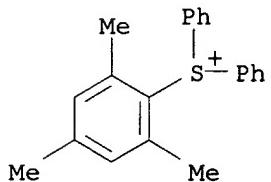
RN 258341-99-0 HCPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6

CMF C21 H21 S



CM 2

CRN 45298-90-6

CMF C8 F17 O3 S

 $\text{-O}_3\text{S-}(\text{CF}_2)_7\text{-CF}_3$

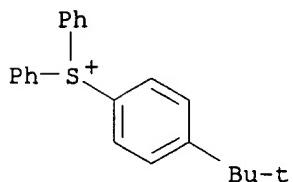
RN 258872-05-8 HCPLUS

CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with
1,1,2,2,3,3,4,4,4-nonafluoro-1-butan sulfonic acid (1:1) (9CI) (CA INDEX
NAME)

CM 1

CRN 66482-54-0

CMF C22 H23 S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

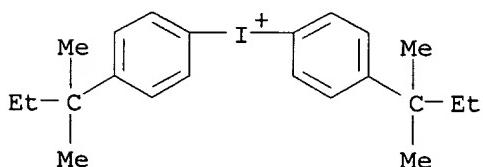
RN 312386-77-9 HCAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
1,1,2,2,3,3,4,4-nonafluoro-1-butanесulfonic acid (1:1) (9CI) (CA INDEX
NAME)

CM 1

CRN 249300-51-4

CMF C22 H30 I



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

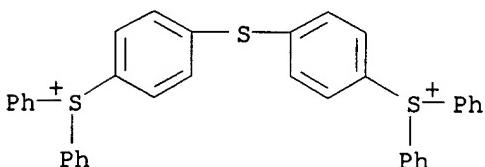
RN 338445-31-1 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
1,1,2,2,3,3,4,4-nonafluoro-1-butanесulfonic acid (1:2) (9CI) (CA INDEX
NAME)

CM 1

CRN 74227-34-2

CMF C36 H28 S3



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

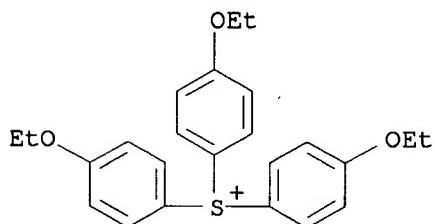
RN 341548-86-5 HCPLUS

CN Sulfonium, tris(4-ethoxyphenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 220391-62-8

CMF C24 H27 O3 S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

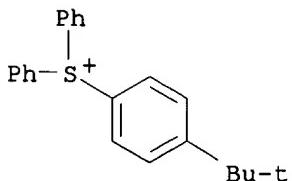
RN 343629-51-6 HCPLUS

CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 66482-54-0

CMF C22 H23 S



CM 2

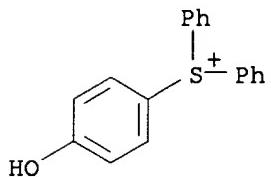
CRN 45298-90-6
 CMF C8 F17 O3 S

-O₃S-(CF₂)₇-CF₃

RN 437652-80-7 HCAPLUS
 CN Sulfonium, (4-hydroxyphenyl)diphenyl-, salt with
 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid
 (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 108493-51-2
 CMF C18 H15 O S



CM 2

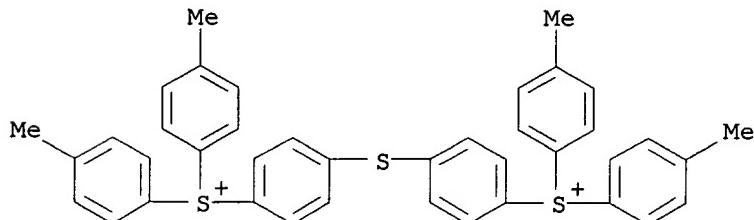
CRN 45298-90-6
 CMF C8 F17 O3 S

-O₃S-(CF₂)₇-CF₃

RN 437652-81-8 HCAPLUS
 CN Sulfonium, (thiodi-4,1-phenylene)bis[bis(4-methylphenyl)-, salt with
 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heneicosfluoro-1-
 decanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 222722-48-7
 CMF C40 H36 S3



CM 2

CRN 126105-34-8
CMF C10 F21 O3 S-O3S- (CF₂)₉-CF₃

L33 ANSWER 3 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2003:200566 HCPLUS
 DN 138:245598
 TI Negative-working chemically amplified electron beam or x-ray resist composition with controlled water content
 IN Adegawa, Yutaka
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 82 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-038
 ICS C08F012-14; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2003076020	A2	20030314	JP 2001-271992	20010907
PRAI JP 2001-271992		20010907		

AB The title compn. contains an electron beam- or x-ray-sensitive acid generator, an alkali solubilizable resin, an acid-sensitive crosslinking agent, and an org. basic compd., wherein the water content in the compn. is .ltoreq.0.5%. The compn. provides the resist of high resoln. and high evenness on the line width and is suitable for use for semiconductor device fabrication.
 ST neg electron beam x ray resist compn water
 IT Sulfonic acids, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (acid generator; neg.-working chem. amplified electron beam or x-ray resist compn.)
 IT Electron beam **resists**
X-ray resists
 (neg.-working, chem. amplified; neg.-working chem. amplified electron beam or x-ray resist compn. with controlled water content)
 IT 2049-95-8, tert-Amylbenzene 7681-11-0, Potassium iodide, reactions
 270564-02-8, Tetramethylammonium pentafluorobenzenesulfonate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (acid generator; neg.-working chem. amplified electron beam or x-ray resist compn.)
 IT **279218-84-7P**
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (acid generator; neg.-working chem. amplified electron beam or x-ray resist compn.)
 IT **258341-98-9P**, Di(4-tert-amylphenyl)iodonium pentafluorobenzenesulfonate

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (acid generator; neg.-working chem. amplified electron beam or x-ray resist compn.)

IT **66003-78-9** 157826-08-9

RL: TEM (Technical or engineered material use); USES (Uses)
 (acid generator; neg.-working chem. amplified electron beam or x-ray resist compn.)

IT 50-00-0, Formaldehyde, reactions 67-56-1, Methanol, reactions
 110726-28-8, Trisp PA

RL: RCT (Reactant); RACT (Reactant or reagent)
 (crosslinking agent; neg.-working chem. amplified electron beam or x-ray resist compn.)

IT 161679-94-3P 162846-57-3P 185502-14-1P 185502-15-2P 197087-74-4P
 425422-24-8DP, 3,4-Dimethoxystyrene-4-tert-butoxystyrene copolymer,
 hydrolyzed 501371-36-4P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (crosslinking agent; neg.-working chem. amplified electron beam or x-ray resist compn.)

IT 484-47-9, 2,4,5-Triphenylimidazole 1122-58-3, 4-(Dimethylamino)pyridine
 3001-72-7, 1,5-Diazabicyclo[4.3.0]non-5-ene 6674-22-2,
 1,8-Diazabicyclo[5.4.0]undec-7-ene 21545-54-0, 1-Cyclohexyl-3-(2-morpholinoethyl)thiourea

RL: TEM (Technical or engineered material use); USES (Uses)
 (org. basic compd.; neg.-working chem. amplified electron beam or x-ray resist compn.)

IT 24979-74-6P 105649-65-8DP, 3-tert-Butoxystyrene homopolymer, hydrolyzed
 105649-65-8P, 3-tert-Butoxystyrene homopolymer **149614-53-9P**
 202829-91-2P 321164-59-4P 345212-27-3P **345212-30-8P**
 345212-56-8P 345212-61-5P 345212-75-1P 345212-78-4P 345212-82-0P
345212-92-2P 349619-43-8P 501371-38-6P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (resin; neg.-working chem. amplified electron beam or x-ray resist compn.)

IT **279218-84-7P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (acid generator; neg.-working chem. amplified electron beam or x-ray resist compn.)

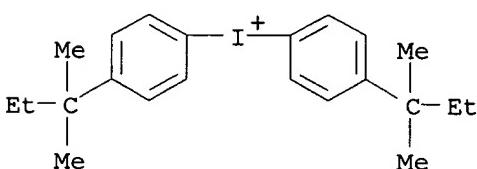
RN 279218-84-7 HCAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (1:1) (9CI) (CA INDEX NAME)

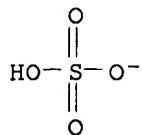
CM 1

CRN 249300-51-4

CMF C22 H30 I

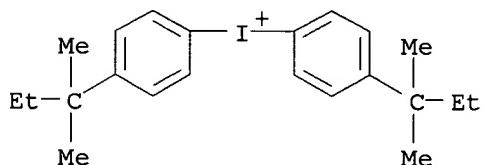


CM 2

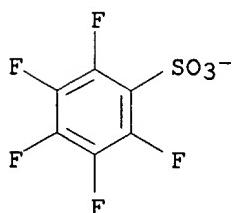
CRN 14996-02-2
CMF H O4 S

IT 258341-98-9P, Di(4-tert-amylphenyl)iodonium pentafluorobenzenesulfonate
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (acid generator; neg.-working chem. amplified electron beam or x-ray resist compn.)
 RN 258341-98-9 HCAPLUS
 CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4
CMF C22 H30 I

CM 2

CRN 46377-88-2
CMF C6 F5 O3 S

IT 66003-78-9
 RL: TEM (Technical or engineered material use); USES (Uses)

(acid generator; neg.-working chem. amplified electron beam or x-ray resist compn.)

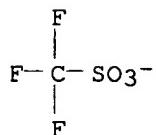
RN 66003-78-9 HCAPLUS

CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
(CA INDEX NAME)

CM 1

CRN 37181-39-8

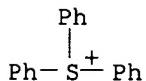
CMF C F3 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



IT 149614-53-9P 345212-30-8P 349619-43-8P

501371-38-6P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resin; neg.-working chem. amplified electron beam or x-ray resist compn.)

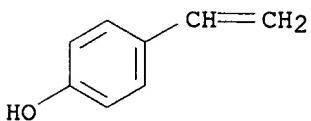
RN 149614-53-9 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 2628-17-3

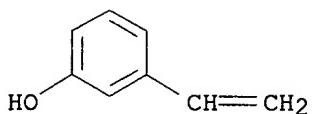
CMF C8 H8 O



CM 2

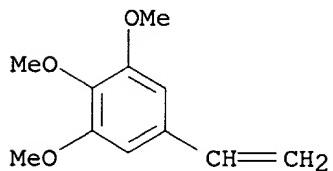
CRN 620-18-8

CMF C8 H8 O

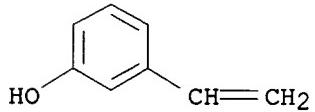


RN 345212-30-8 HCAPLUS
 CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,2,3-trimethoxybenzene (9CI)
 (CA INDEX NAME)

CM 1

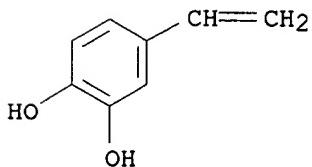
CRN 13400-02-7
 CMF C11 H14 O3

CM 2

CRN 620-18-8
 CMF C8 H8 O

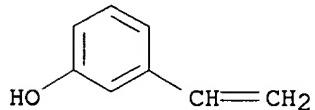
RN 349619-43-8 HCAPLUS
 CN 1,2-Benzenediol, 4-ethenyl-, polymer with 3-ethenylphenol (9CI) (CA INDEX
 NAME)

CM 1

CRN 6053-02-7
 CMF C8 H8 O2

CM 2

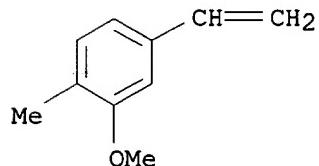
CRN 620-18-8
 CMF C8 H8 O



RN 501371-38-6 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with 4-ethenyl-2-methoxy-1-methylbenzene (9CI)
 (CA INDEX NAME)

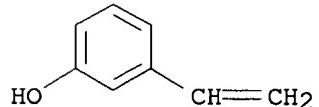
CM 1

CRN 501371-37-5
 CMF C10 H12 O



CM 2

CRN 620-18-8
 CMF C8 H8 O



L33 ANSWER 4 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2003:167237 HCPLUS
 DN 138:212796
 TI Negative-working electron beam or x-ray resist compositions containing specific acid generator
 IN Yasunami, Shoichiro; Nishiyama, Fumiyuki; Hyakuta, Atsushi
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 47 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-004
 ICS C08F012-22; G03F007-038; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003066596 US 2003054287	A2 A1	20030305 20030320	JP 2001-254879 US 2002-120551	20010824 20020412
PRAI	JP 2001-115596 JP 2001-169770 JP 2001-254879	A A A	20010413 20010605 20010824		
OS	MARPAT 138:212796				
AB	The title compn. contains an alkali-sol. polymer, an acid-sensitive crosslinking agent, an actinic ray- or radiation-sensitive sulfonimide-based acid generator, wherein the acid generator has structure R1a-N(-SO ₂ -R2a)(-SO ₂ -R3a) (R1a-3a = alkyl, cycloalkyl, aryl, aralkyl, etc.). The compn. shows the high sensitivity and provides the resist showing high resoln., good pattern profile, and the improved pattern line edge roughness.				
ST	neg working electron beam x ray resist compn				
IT	Electron beam resists X-ray resists (neg.-working electron beam or x-ray resists compns. contg. specific acid generator)				
IT	75-59-2, Tetramethylammonium hydroxide 832-53-1, Pentafluorobenzenesulfonyl chloride RL: RCT (Reactant); RACT (Reactant or reagent) (acid generator; neg.-working electron beam or x-ray resists compns.)				
IT	270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (acid generator; neg.-working electron beam or x-ray resists compns.)				
IT	1886-74-4P 22040-25-1P 37595-74-7P 52331-16-5P 84563-54-2P 144317-44-2P 145100-50-1P 153698-46-5P 177786-98-0P 258341-98-9P 335385-81-4P 500004-85-3P RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acid generator; neg.-working electron beam or x-ray resists compns.)				
IT	162846-57-3P RL: MOA (Modifier or additive use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (crosslinking agent; neg.-working electron beam or x-ray resists compns.)				
IT	161679-94-3P 161679-95-4P 161679-98-7P 185502-11-8P 185502-14-1P 185502-15-2P 197087-73-3P 197087-74-4P RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses) (crosslinking agent; neg.-working electron beam or x-ray resists compns.)				
IT	50-00-0, Formaldehyde, reactions 67-56-1, Methanol, reactions 110726-28-8, Tris-PA (phenol) RL: RCT (Reactant); RACT (Reactant or reagent) (crosslinking agent; neg.-working electron beam or x-ray resists compns.)				
IT	71-43-2, Benzene, reactions 945-51-7, Diphenylsulfoxide 2049-95-8, tert-Amylbenzene 7664-93-9, Sulfuric acid, reactions 7758-05-6, Potassium iodate 12027-06-4, Ammonium iodide RL: RCT (Reactant); RACT (Reactant or reagent) (neg.-working electron beam or x-ray resists compns.)				
IT	3744-08-9P , Triphenylsulfonium iodide 258342-09-5P				

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(neg.-working electron beam or x-ray resists compns.)

IT **24979-69-9P** 24979-70-2P 24979-74-6P 135648-85-0P
219838-71-8P 321164-59-4P 345212-59-1P **396098-38-7P**

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(resin; neg.-working electron beam or x-ray resists compns.)

IT **84563-54-2P 144317-44-2P 153698-46-5P**
177786-98-0P 258341-98-9P 335385-81-4P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(acid generator; neg.-working electron beam or x-ray resists compns.)

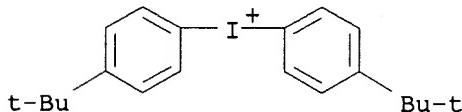
RN 84563-54-2 HCAPLUS

CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 61267-44-5

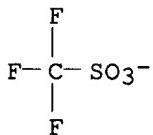
CMF C20 H26 I



CM 2

CRN 37181-39-8

CMF C F3 O3 S



RN 144317-44-2 HCAPLUS

CN Sulfonium, triphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

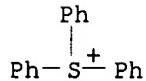
CRN 45187-15-3

CMF C4 F9 O3 S

$-\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$

CM 2

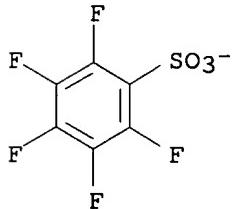
CRN 18393-55-0
 CMF C18 H15 S



RN 153698-46-5 HCPLUS
 CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
 (9CI) (CA INDEX NAME)

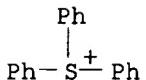
CM 1

CRN 46377-88-2
 CMF C6 F5 O3 S



CM 2

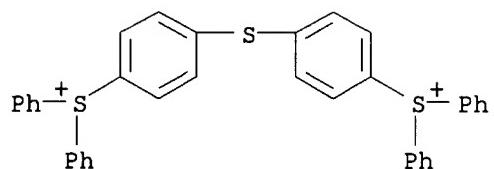
CRN 18393-55-0
 CMF C18 H15 S



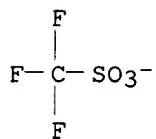
RN 177786-98-0 HCPLUS
 CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with trifluoromethanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2
 CMF C36 H28 S3



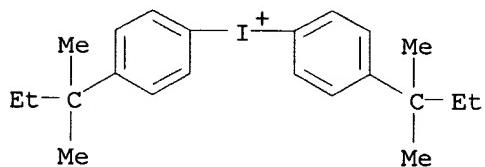
CM 2

CRN 37181-39-8
CMF C F3 O3 S

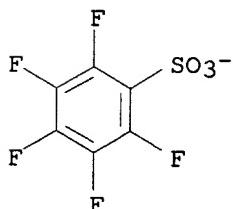
RN 258341-98-9 HCPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4
CMF C22 H30 I

CM 2

CRN 46377-88-2
CMF C6 F5 O3 S

RN 335385-81-4 HCAPLUS
 CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, 1-octanesulfonate (9CI) (CA INDEX NAME)

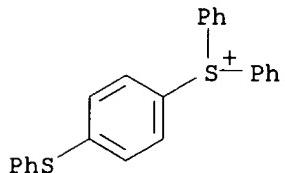
CM 1

CRN 60283-46-7
 CMF C8 H17 O3 S

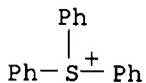
Me—(CH₂)₇—SO₃[—]

CM 2

CRN 47480-44-4
 CMF C₂₄ H₁₉ S₂



IT 3744-08-9P, Triphenylsulfonium iodide 258342-09-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (neg.-working electron beam or x-ray resists compns.)
 RN 3744-08-9 HCAPLUS
 CN Sulfonium, triphenyl-, iodide (8CI, 9CI) (CA INDEX NAME)

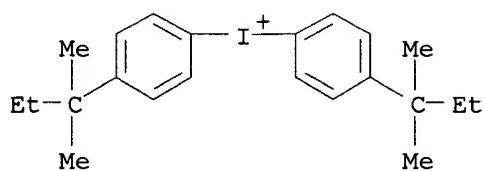


I[—]

RN 258342-09-5 HCAPLUS
 CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (2:1) (9CI) (CA INDEX NAME)

CM 1

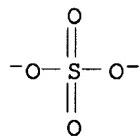
CRN 249300-51-4
 CMF C₂₂ H₃₀ I



CM 2

CRN 14808-79-8

CMF O4 S



IT 24979-69-9P 396098-38-7P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resin; neg.-working electron beam or x-ray resists compns.)

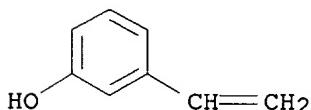
RN 24979-69-9 HCPLUS

CN Phenol, 3-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 620-18-8

CMF C8 H8 O



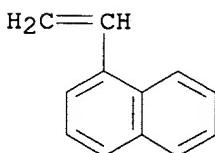
RN 396098-38-7 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 1-ethenynaphthalene (9CI) (CA INDEX NAME)

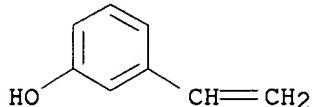
CM 1

CRN 826-74-4

CMF C12 H10



CM 2

CRN 620-18-8
CMF C8 H8 O

L33 ANSWER 5 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2003:17554 HCPLUS
 DN 138:98190
 TI Chemically-amplified negative-working resist
 compositions for processing with electron beam or x-ray
 IN Takahashi, Akira; Shirakawa, Hiroshi; Adegawa, Yutaka
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 57 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-004
 ICS H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 28
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003005355	A2	20030108	JP 2001-186705	20010620
PRAI JP 2001-186705		20010620		
OS MARPAT 138:98190				

 GI

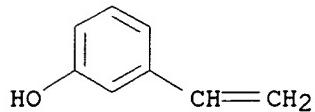
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The compns. comprise (A) compds. generating acids on irradn. with electron beam or x-ray, (B) polymers sol. in aq. alk. solns., and (D) .gtoreq.1 compds. selected from heterocycles defined by 8 Markush structures such as I, II, III, IV, V, and VI (R11 = H, aliph., arom., mixed, or heterocyclic amine, amide, imide, ester, halo, halogen substituted alkyl or aryl, OH, carboxyl, thiol, cyano, nitro, formyl, sulfonyl, sulfonamide, acyl, aroyl, alkyl, alkyloxy, alkenyloxy, heterocyclic, aryl, alkenyl, aralkyl; R12 = H, arom. or heterocyclic amine, halogen-substituted alkyl or aryl, OH, acyl, aroyl, alkyl, alkyloxy, alkenyloxy, heterocyclic, aryl, alkenyl, aralkyl, ester, carbonate ester). The resists have excellent stability against post exposure bake. Resists with high resoln. and excellent profiles are obtained.
 ST chem amplified neg working photoresist electron beam;
 x ray neg working photoresist; heterocyclic additive

neg working photoresist; pteridine deriv additive
neg working photoresist
IT **Negative photoresists**
(chem.-amplified; chem.-amplified **neg.-working resist**
compns. contg. heterocyclic compds. for obtaining fine profile patterns
by processing with electron beam or x-ray)
IT 130501-59-6P, 4-Hydroxystyrene homopolymer acetate 173786-80-6DP,
4-Acetoxyxystyrene-4-methoxystyrene copolymer, hydrolyzed 349647-07-0P,
Acrylonitrile-2-hydroxyethyl acrylate-2-[(4'-hydroxyphenyl)carbonyloxy]ethyl methacrylate copolymer
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(chem.-amplified **neg.-working resist** compns. contg.
heterocyclic compds. for obtaining fine profile patterns by processing
with electron beam or x-ray)
IT 110726-28-8, 1-[(.alpha.-Methyl-.alpha.-(4-hydroxyphenyl)ethyl]-4-
[.alpha.,.alpha.-bis(4-hydroxyphenyl)ethyl]benzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(chem.-amplified **neg.-working resist** compns. contg.
heterocyclic compds. for obtaining fine profile patterns by processing
with electron beam or x-ray)
IT 146-14-5 146-17-8, Riboflavin 5'-(dihydrogen phosphate) 487-21-8,
2,4(1H,3H)-Pteridinedione 490-59-5, Benzo[g]pteridine-2,4(1H,3H)-dione
945-24-4 1005-24-9 1086-80-2 1910-42-5 2236-60-4
24979-69-9 24979-70-2 24979-74-6 24980-18-5 25535-16-4
28721-76-8 31722-01-7 86690-04-2 **149614-53-9** 321164-59-4
345212-27-3 **396098-38-7** **437652-81-8**
477705-24-1 482636-16-8 482636-17-9 482636-18-0
482636-19-1
RL: TEM (Technical or engineered material use); USES (Uses)
(chem.-amplified **neg.-working resist** compns. contg.
heterocyclic compds. for obtaining fine profile patterns by processing
with electron beam or x-ray)
IT 162846-57-3P
RL: PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or
engineered material use); PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)
(crosslinking agent; chem.-amplified **neg.-working**
resist compns. contg. heterocyclic compds. for obtaining fine
profile patterns by processing with electron beam or x-ray)
IT 161679-94-3P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(crosslinking agent; chem.-amplified **neg.-working**
resist compns. contg. heterocyclic compds. for obtaining fine
profile patterns by processing with electron beam or x-ray)
IT 3089-11-0 32449-09-5 185502-14-1 185502-15-2 197087-74-4
RL: TEM (Technical or engineered material use); USES (Uses)
(crosslinking agent; chem.-amplified **neg.-working**
resist compns. contg. heterocyclic compds. for obtaining fine
profile patterns by processing with electron beam or x-ray)
IT 39153-56-5 138529-81-4 138529-84-7 **241806-75-7**
241806-76-8 **258341-99-0** **258872-05-8**
312386-77-9 **338445-31-1** **341548-86-5**
343629-51-6 **437652-80-7** **482636-20-4**
RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generator; chem.-amplified **neg.-working**
resist compns. contg. heterocyclic compds. for obtaining fine

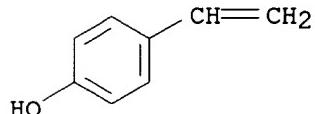
profile patterns by processing with electron beam or x-ray)
IT 24979-69-9 149614-53-9 396098-38-7
437652-81-8 477705-24-1
RL: TEM (Technical or engineered material use); USES (Uses)
(chem.-amplified neg.-working **resist** compns. contg.
heterocyclic compds. for obtaining fine profile patterns by processing
with electron beam or x-ray)
RN 24979-69-9 HCAPLUS
CN Phenol, 3-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

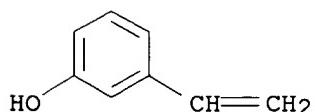
CRN 620-18-8
CMF C8 H8 O

RN 149614-53-9 HCAPLUS
CN Phenol, 3-ethenyl-, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 2628-17-3
CMF C8 H8 O

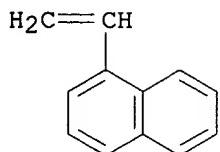
CM 2

CRN 620-18-8
CMF C8 H8 O

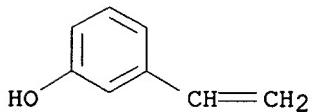
RN 396098-38-7 HCAPLUS
CN Phenol, 3-ethenyl-, polymer with 1-ethenynaphthalene (9CI) (CA INDEX NAME)

CM 1

CRN 826-74-4
CMF C12 H10

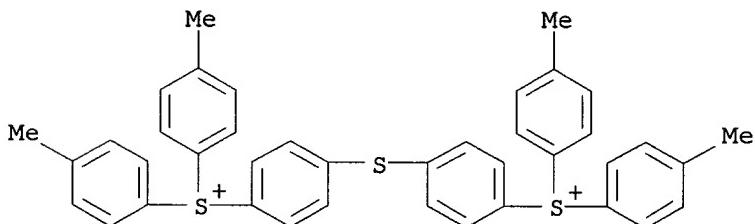


CM 2

CRN 620-18-8
CMF C₈ H₈ O

RN 437652-81-8 HCPLUS
 CN Sulfonium, (thiodi-4,1-phenylene)bis[bis(4-methylphenyl)-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heneicosfluoro-1-decanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 222722-48-7
CMF C₄₀ H₃₆ S₃

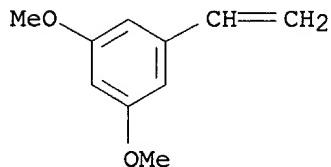
CM 2

CRN 126105-34-8
CMF C₁₀ F₂₁ O₃ S-O₃S-(CF₂)₉-CF₃

RN 477705-24-1 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with 1-ethenyl-3,5-dimethoxybenzene (9CI) (CA INDEX NAME)

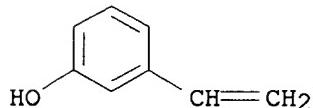
CM 1

CRN 40243-87-6
 CMF C10 H12 O2



CM 2

CRN 620-18-8
 CMF C8 H8 O



IT 241806-75-7 241806-76-8 258341-99-0
 258872-05-8 312386-77-9 338445-31-1
 341548-86-5 343629-51-6 437652-80-7
 482636-20-4

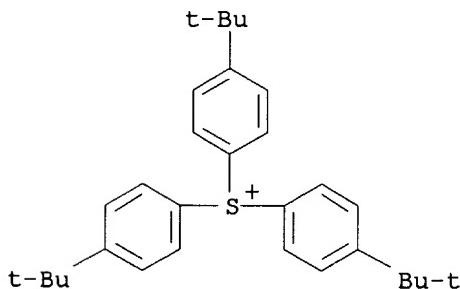
RL: TEM (Technical or engineered material use); USES (Uses)
 (photoacid generator; chem.-amplified neg.-working
 resist compns. contg. heterocyclic compds. for obtaining fine
 profile patterns by processing with electron beam or x-ray)

RN 241806-75-7 HCAPLUS

CN Sulfonium, tris[4-(1,1-dimethylpropyl)phenyl]-, salt with
 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX
 NAME)

CM 1

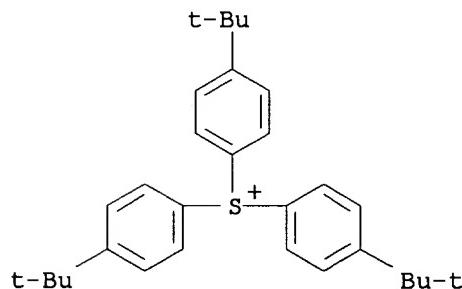
CRN 91815-56-4
 CMF C30 H39 S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S-O₃S-(CF₂)₃-CF₃RN 241806-76-8 HCAPLUS
CN Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

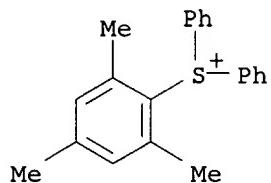
CRN 91815-56-4
CMF C30 H39 S

CM 2

CRN 45298-90-6
CMF C8 F17 O3 S-O₃S-(CF₂)₇-CF₃RN 258341-99-0 HCAPLUS
CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

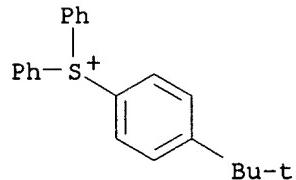
CRN 47191-44-6
CMF C21 H21 S



CM 2

CRN 45298-90-6
CMF C8 F17 O3 S⁻O₃S-(CF₂)₇-CF₃RN 258872-05-8 HCAPLUS
CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX
NAME)

CM 1

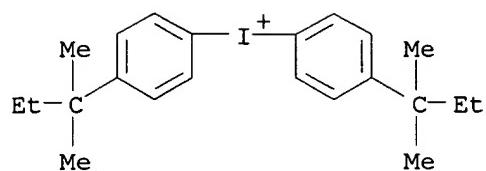
CRN 66482-54-0
CMF C22 H23 S

CM 2

CRN 45187-15-3
CMF C4 F9 O3 S⁻O₃S-(CF₂)₃-CF₃RN 312386-77-9 HCAPLUS
CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]⁺, salt with
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX
NAME)

CM 1

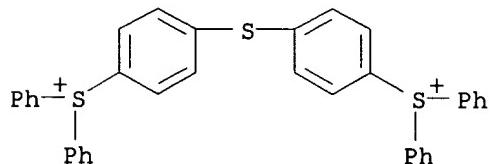
CRN 249300-51-4
CMF C22 H30 I



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S $\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$ RN 338445-31-1 HCAPLUS
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
1,1,2,2,3,3,4,4,4-nonafluoro-1-butan sulfonic acid (1:2) (9CI) (CA INDEX
NAME)

CM 1

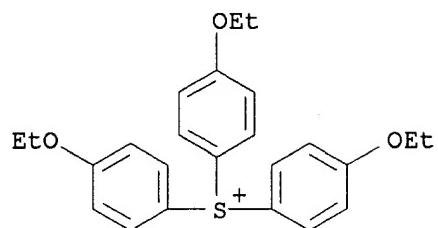
CRN 74227-34-2
CMF C36 H28 S3

CM 2

CRN 45187-15-3
CMF C4 F9 O3 S $\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$ RN 341548-86-5 HCAPLUS
CN Sulfonium, tris(4-ethoxyphenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-
butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

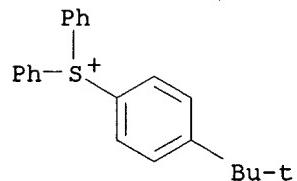
CRN 220391-62-8
CMF C24 H27 O3 S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S $-O_3S-(CF_2)_3-CF_3$ RN 343629-51-6 HCPLUS
CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

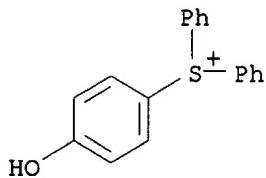
CRN 66482-54-0
CMF C22 H23 S

CM 2

CRN 45298-90-6
CMF C8 F17 O3 S $-O_3S-(CF_2)_7-CF_3$ RN 437652-80-7 HCPLUS
CN Sulfonium, (4-hydroxyphenyl)diphenyl-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

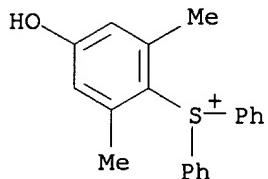
CRN 108493-51-2
CMF C18 H15 O S



CM 2

CRN 45298-90-6
CMF C8 F17 O3 S $\text{-O}_3\text{S-}(\text{CF}_2)_7\text{-CF}_3$ RN 482636-20-4 HCPLUS
CN Sulfonium, (4-hydroxy-2,6-dimethylphenyl)diphenyl-, salt with
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX
NAME)

CM 1

CRN 336609-07-5
CMF C20 H19 O S

CM 2

CRN 45187-15-3
CMF C4 F9 O3 S $\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

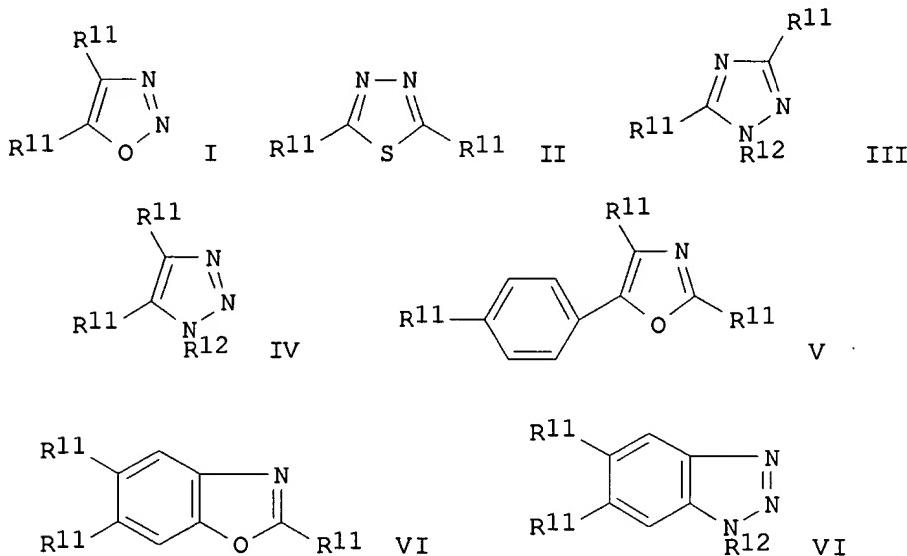
L33 ANSWER 6 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2003:14489 HCPLUS
 DN 138:98186
 TI Chemically-amplified **negative**-working **resist**
 compositions for processing with electron beam or x-ray
 IN Takahashi, Omote; Shirakawa, Hiroshi; Adegawa, Yutaka
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 57 pp.

CODEN: JKXXAF

DT Patent
 LA Japanese
 IC ICM G03F007-004
 ICS H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 28

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003005356	A2	20030108	JP 2001-186786	20010620
PRAI	JP 2001-186786		20010620		
OS	MARPAT 138:98186				
GI					



AB The compns. comprise (A) compds. generating acids on irradn. with electron beam or x-ray, (B) polymers sol. in aq. alk. solns., and (D) .gt;req.1 compds. selected from heterocycles defined by 9 Markush structures such as I, II, III, IV, V, VI, and VII (R11 = H, aliph., arom., mixed, or heterocyclic amine, amide, imide, ester, halo, halogen substituted alkyl or aryl, OH, carboxyl, thiol, cyano, nitro, formyl, sulfonyl, sulfonamide, acyl, aroyl, alkyl, alkyloxy, alkenyloxy, heterocyclic, aryl, alkenyl, aralkyl; R12 = H, arom. or heterocyclic amine, halogen-substituted alkyl or aryl, OH, acyl, aroyl, alkyl, alkyloxy, alkenyloxy, heterocyclic, aryl, alkenyl, aralkyl, ester, carbonate ester). The resists have excellent stability against post exposure bake. Resists with high resln. and excellent profiles are obtained.

ST chem amplified neg working photoresist electron beam;
 x ray neg working photoresist; triazole additive
 neg working photoresist; heterocyclic additive
 neg working photoresist

IT Negative photoresists

(chem.-amplified; chem.-amplified neg.-working resist
 compns. contg. heterocyclic compds. for obtaining fine profile patterns

by processing with electron beam or x-ray)

IT 130501-59-6P, 4-Hydroxystyrene homopolymer acetate 173786-80-6DP,
 4-Acetoxyxystyrene-4-methoxystyrene copolymer, hydrolyzed 349647-07-0P,
 Acrylonitrile-2-hydroxyethyl acrylate-2-[(4'-hydroxyphenyl)carbonyloxy]ethyl
 methacrylate copolymer

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (chem.-amplified neg.-working resist compns. contg.
 heterocyclic compds. for obtaining fine profile patterns by processing
 with electron beam or x-ray)

IT 110726-28-8, 1-[.alpha.-Methyl-.alpha.-(4-hydroxyphenyl)ethyl]-4-
 [.alpha.,.alpha.-bis(4-hydroxyphenyl)ethyl]benzene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (chem.-amplified neg.-working resist compns. contg.
 heterocyclic compds. for obtaining fine profile patterns by processing
 with electron beam or x-ray)

IT 92-71-7 1806-34-4 3073-87-8 3147-75-9 3864-99-1 4184-79-6
 7128-64-5 17472-96-7 **24979-69-9** 24979-70-2 24979-74-6
 24980-18-5 28539-02-8, 1H-Benzotriazole-1-methanol 148044-19-3
149614-53-9 150405-69-9 321164-59-4 345212-27-3
396098-38-7 **477705-24-1** 482654-95-5 482654-96-6
 482654-97-7 482654-98-8 482654-99-9 482655-00-5 482655-01-6
 RL: TEM (Technical or engineered material use); USES (Uses)
 (chem.-amplified neg.-working resist compns. contg.
 heterocyclic compds. for obtaining fine profile patterns by processing
 with electron beam or x-ray)

IT 162846-57-3P
 RL: PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or
 engineered material use); PREP (Preparation); RACT (Reactant or reagent);
 USES (Uses)
 (crosslinking agent; chem.-amplified neg.-working
 resist compns. contg. heterocyclic compds. for obtaining fine
 profile patterns by processing with electron beam or x-ray)

IT 161679-94-3P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (crosslinking agent; chem.-amplified neg.-working
 resist compns. contg. heterocyclic compds. for obtaining fine
 profile patterns by processing with electron beam or x-ray)

IT 3089-11-0 32449-09-5 185502-14-1 185502-15-2 197087-74-4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (crosslinking agent; chem.-amplified neg.-working
 resist compns. contg. heterocyclic compds. for obtaining fine
 profile patterns by processing with electron beam or x-ray)

IT 39153-56-5 138529-81-4 138529-84-7 **241806-75-7**
241806-76-8 **258341-99-0** **258872-05-8**
 312386-77-9 338445-31-1 **341548-86-5**
343629-51-6 **437652-80-7** **437652-81-8**
482636-20-4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (photoacid generator; chem.-amplified neg.-working
 resist compns. contg. heterocyclic compds. for obtaining fine
 profile patterns by processing with electron beam or x-ray)

IT **24979-69-9** **149614-53-9** **396098-38-7**
477705-24-1
 RL: TEM (Technical or engineered material use); USES (Uses)
 (chem.-amplified neg.-working resist compns. contg.
 heterocyclic compds. for obtaining fine profile patterns by processing

with electron beam or x-ray)

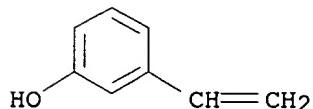
RN 24979-69-9 HCAPLUS

CN Phenol, 3-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 620-18-8

CMF C8 H8 O



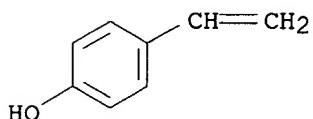
RN 149614-53-9 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 2628-17-3

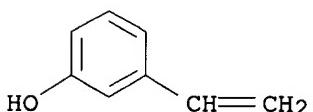
CMF C8 H8 O



CM 2

CRN 620-18-8

CMF C8 H8 O



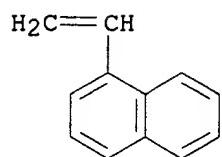
RN 396098-38-7 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 1-ethenynaphthalene (9CI) (CA INDEX NAME)

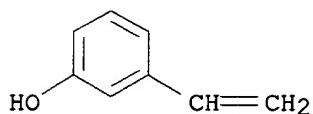
CM 1

CRN 826-74-4

CMF C12 H10



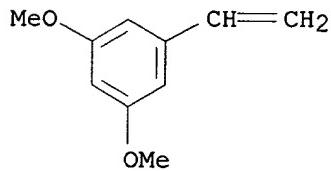
CM 2

CRN 620-18-8
CMF C8 H8 O

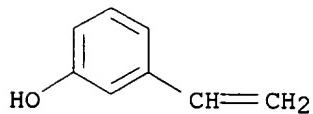
RN 477705-24-1 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 1-ethenyl-3,5-dimethoxybenzene (9CI) (CA INDEX NAME)

CM 1

CRN 40243-87-6
CMF C10 H12 O2

CM 2

CRN 620-18-8
CMF C8 H8 OIT 241806-75-7 241806-76-8 258341-99-0
258872-05-8 312386-77-9 338445-31-1
341548-86-5 343629-51-6 437652-80-7
437652-81-8 482636-20-4RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generator; chem.-amplified neg.-working)

resist compns. contg. heterocyclic compds. for obtaining fine profile patterns by processing with electron beam or x-ray)

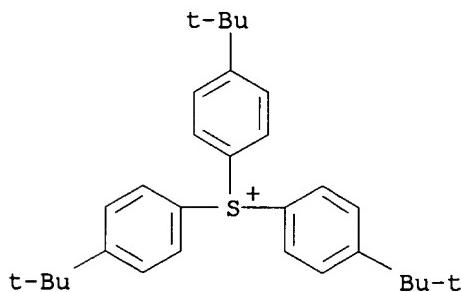
RN 241806-75-7 HCPLUS

CN Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, salt with 1,1,2,2,3,3,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 91815-56-4

CMF C30 H39 S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

-O₃S-(CF₂)₃-CF₃

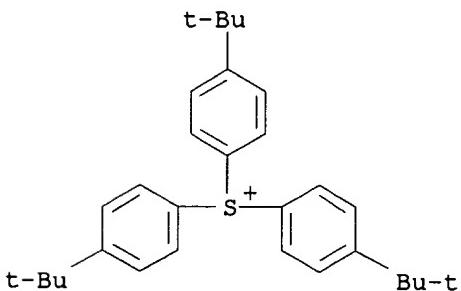
RN 241806-76-8 HCPLUS

CN Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 91815-56-4

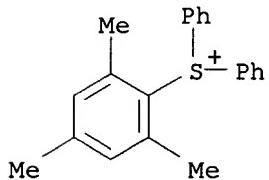
CMF C30 H39 S



CM 2

CRN 45298-90-6
CMF C8 F17 O3 S-O₃S-(CF₂)₇-CF₃RN 258341-99-0 HCAPLUS
CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

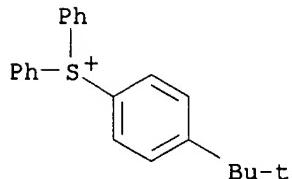
CM 1

CRN 47191-44-6
CMF C21 H21 S

CM 2

CRN 45298-90-6
CMF C8 F17 O3 S-O₃S-(CF₂)₇-CF₃RN 258872-05-8 HCAPLUS
CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with
1,1,2,2,3,3,4,4,4-nonafluoro-1-butan sulfonic acid (1:1) (9CI) (CA INDEX
NAME)

CM 1

CRN 66482-54-0
CMF C22 H23 S

CM 2

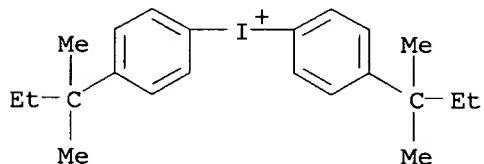
CRN 45187-15-3
 CMF C4 F9 O3 S

 $\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

RN 312386-77-9 HCAPLUS
 CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
 1,1,2,2,3,3,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX
 NAME)

CM 1

CRN 249300-51-4
 CMF C22 H30 I



CM 2

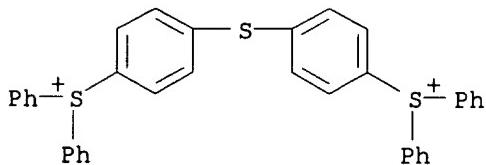
CRN 45187-15-3
 CMF C4 F9 O3 S

 $\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

RN 338445-31-1 HCAPLUS
 CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
 1,1,2,2,3,3,4,4-nonafluoro-1-butanesulfonic acid (1:2) (9CI) (CA INDEX
 NAME)

CM 1

CRN 74227-34-2
 CMF C36 H28 S3



CM 2

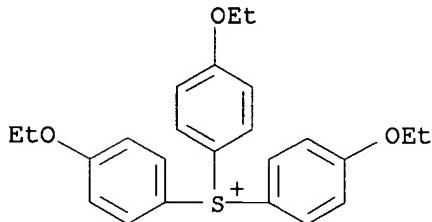
CRN 45187-15-3
 CMF C4 F9 O3 S

 $-\text{O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$

RN 341548-86-5 HCAPLUS
 CN Sulfonium, tris(4-ethoxyphenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 220391-62-8
 CMF C24 H27 O3 S



CM 2

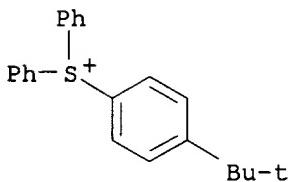
CRN 45187-15-3
 CMF C4 F9 O3 S

 $-\text{O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$

RN 343629-51-6 HCAPLUS
 CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

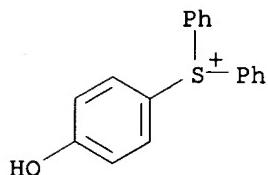
CRN 66482-54-0
 CMF C22 H23 S



CM 2

CRN 45298-90-6
CMF C8 F17 O3 S-O₃S-(CF₂)₇-CF₃RN 437652-80-7 HCPLUS
CN Sulfonium, (4-hydroxyphenyl)diphenyl-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

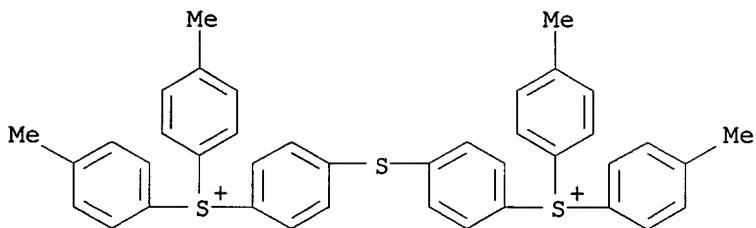
CRN 108493-51-2
CMF C18 H15 O S

CM 2

CRN 45298-90-6
CMF C8 F17 O3 S-O₃S-(CF₂)₇-CF₃RN 437652-81-8 HCPLUS
CN Sulfonium, (thiodi-4,1-phenylene)bis[bis(4-methylphenyl)-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heneicosfluoro-1-
decanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 222722-48-7
CMF C40 H36 S3



CM 2

CRN 126105-34-8

CMF C10 F21 O3 S

 $\text{-O}_3\text{S-}(\text{CF}_2)_9\text{-CF}_3$

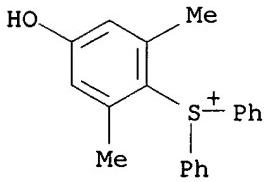
RN 482636-20-4 HCAPLUS

CN Sulfonium, (4-hydroxy-2,6-dimethylphenyl)diphenyl-, salt with
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanесulfonic acid (1:1) (9CI) (CA INDEX
NAME)

CM 1

CRN 336609-07-5

CMF C20 H19 O S



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

 $\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

L33 ANSWER 7 OF 25 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:976087 HCAPLUS

DN 138:47316

TI Negative-working resist composition for semiconductor
device fabrication

IN Yasunami, Shoichiro; Takahashi, Omote; Adegawa, Yutaka

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 39 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-038
 ICS G03F007-004; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002372783	A2	20021226	JP 2001-182117	20010615
PRAI	JP 2001-182117		20010615		
AB	The compn. comprises (A) a compd. generating acid by actinic ray or radiation, (B) an alkali-sol. resin, (C) a crosslinking agent which crosslinks the resin by the action of an acid, and (D) a compd. having both .gtoreq.1 carboxyl group and .gtoreq.1 secondary or tertiary alicyclic amino group. The compn. shows high sensitivity and resoln., gives clear rectangular patterns, and is useful for semiconductor device fabrication.				
ST	neg. resist alkali soluble resin crosslinking agent; resist amino carboxyl compd; semiconductor device fabrication radiation resist				
IT	Semiconductor device fabrication (neg. resist contg. alkali-sol. resin, crosslinking agent, and compd. having amino and carboxyl groups for semiconductor device fabrication)				
IT	Resists (radiation-sensitive, neg. ; neg. resist contg. alkali-sol. resin, crosslinking agent, and compd. having amino and carboxyl groups)				
IT	153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acid generator; neg. resist contg. alkali-sol. resin, crosslinking agent, and compd. having amino and carboxyl groups)				
IT	270563-92-3 270563-93-4 270563-96-7 279244-39-2 349619-88-1 389859-77-2 RL: TEM (Technical or engineered material use); USES (Uses) (acid generator; neg. resist contg. alkali-sol. resin, crosslinking agent, and compd. having amino and carboxyl groups)				
IT	51-17-2, Benzoimidazole 484-47-9, 2,4,5-Triphenylimidazole 1122-58-3, 4-Dimethylaminopyridine 5622-97-9 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses) (basic compd.; neg. resist contg. alkali-sol. resin, crosslinking agent, and compd. having amino and carboxyl groups)				
IT	161679-94-3P RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (crosslinking agent; neg. resist contg. alkali-sol. resin, crosslinking agent, and compd. having amino and carboxyl groups)				
IT	3089-11-0 32449-09-5 185502-14-1 185502-15-2 197087-74-4 RL: TEM (Technical or engineered material use); USES (Uses) (crosslinking agent; neg. resist contg. alkali-sol. resin, crosslinking agent, and compd. having amino and carboxyl groups)				
IT	51-35-4, 4-Hydroxyproline 147-85-3, L-Proline, uses 475-11-6, N-Methylproline 498-94-2, Isonipeptic acid 498-95-3, Nipecotic acid				

535-75-1, Pipecolic acid 567-36-2, 3-Hydroxyproline 609-36-9, Proline
 2762-32-5, 2-Piperazinecarboxylic acid 7730-87-2
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material
 use); USES (Uses)
 (neg. resist contg. alkali-sol. resin, crosslinking
 agent, and compd. having amino and carboxyl groups)

IT 130501-59-6P, Poly(p-hydroxystyrene) acetate 173786-80-6DP,
 4-Acetoxy styrene-4-methoxystyrene copolymer, hydrolyzed
258341-98-9P 349647-07-0P, Acrylonitrile-2-hydroxyethyl
 acrylate-2-[$(4'$ -hydroxyphenyl)carbonyloxy]ethyl methacrylate copolymer
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (neg. resist contg. alkali-sol. resin, crosslinking
 agent, and compd. having amino and carboxyl groups)

IT **24979-69-9**, Poly(m-hydroxystyrene) 24979-70-2,
 Poly(p-hydroxystyrene) **149614-53-9**, m-Hydroxystyrene-p-
 hydroxystyrene copolymer 219838-71-8, Poly(3,5-dihydroxystyrene)
 345212-59-1 **396098-38-7** **473313-51-8** 478918-36-4
478918-37-5 478918-38-6
 RL: TEM (Technical or engineered material use); USES (Uses)
 (neg. resist contg. alkali-sol. resin, crosslinking
 agent, and compd. having amino and carboxyl groups)

IT 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
 RACT (Reactant or reagent)
 (prepn. and reaction with triphenylsulfonium iodide)

IT 162846-57-3P
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
 RACT (Reactant or reagent)
 (prepn. of crosslinking agent)

IT 50-00-0, Formaldehyde, reactions 110726-28-8, Trisp PA
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of crosslinking agent)

IT **258342-09-5P**
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
 RACT (Reactant or reagent)
 (prepn. of diamylphenyliodonium pentafluorobenzenesulfonate)

IT 2049-95-8, tert-Amylbenzene 7758-05-6, Potassium iodate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of diamylphenyliodonium pentafluorobenzenesulfonate)

IT 75-59-2, Tetramethylammonium hydroxide 832-53-1,
 Pentafluorobenzenesulfonyl chloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of tetramethylammonium pentafluorobenzenesulfonate)

IT 71-43-2, Benzene, reactions 945-51-7, Diphenylsulfoxide 12027-06-4,
 Ammonium iodide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of triphenylsulfonium iodide)

IT **3744-08-9P**, Triphenylsulfonium iodide
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
 RACT (Reactant or reagent)
 (reaction with tetramethylammonium pentafluorobenzenesulfonate)

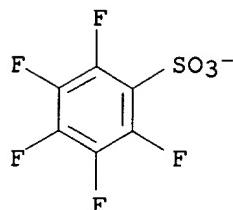
IT **153698-46-5P**, Triphenylsulfonium pentafluorobenzenesulfonate
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (acid generator; neg. resist contg. alkali-sol.
 resin, crosslinking agent, and compd. having amino and carboxyl groups)

RN 153698-46-5 HCPLUS

CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

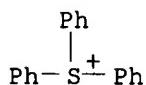
CM 1

CRN 46377-88-2
CMF C6 F5 O3 S



CM 2

CRN 18393-55-0
CMF C18 H15 S



IT 270563-92-3 270563-93-4 270563-96-7
279244-39-2 349619-88-1 389859-77-2

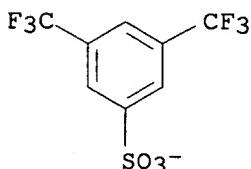
RL: TEM (Technical or engineered material use); USES (Uses)
(acid generator; neg. resist contg. alkali-sol.
resin, crosslinking agent, and compd. having amino and carboxyl groups)

RN 270563-92-3 HCAPLUS

CN Sulfonium, bis(4-methylphenyl)phenyl-, salt with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

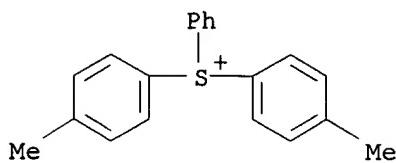
CRN 213740-84-2
CMF C8 H3 F6 O3 S



CM 2

CRN 70082-58-5

CMF C20 H19 S



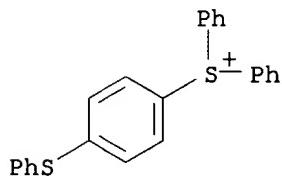
RN 270563-93-4 HCAPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47480-44-4

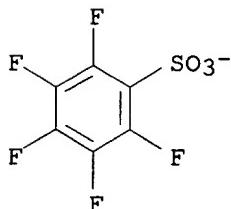
CMF C24 H19 S2



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



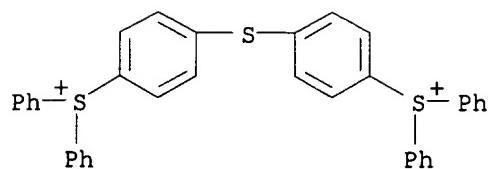
RN 270563-96-7 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2

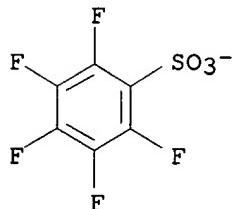
CMF C36 H28 S3



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



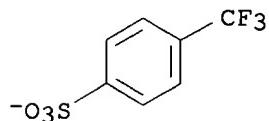
RN 279244-39-2 HCPLUS

CN Sulfonium, (4-butoxyphenyl)diphenyl-, salt with 4-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 120998-63-2

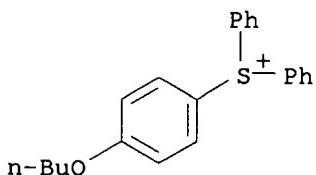
CMF C7 H4 F3 O3 S



CM 2

CRN 112406-00-5

CMF C22 H23 O S

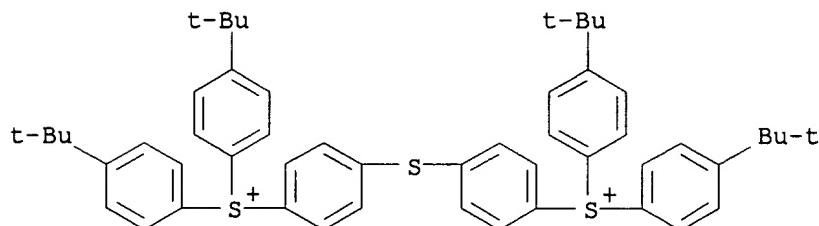


RN 349619-88-1 HCPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[bis[4-(1,1-dimethylethyl)phenyl]-, salt with 4-fluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

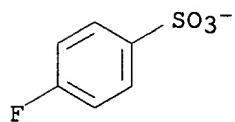
CM 1

CRN 343629-56-1
CMF C52 H60 S3



CM 2

CRN 61657-38-3
CMF C6 H4 F O3 S

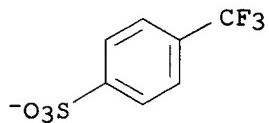


RN 389859-77-2 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with 4-(trifluoromethyl)benzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

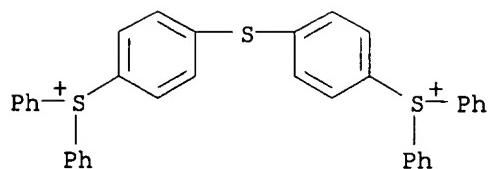
CM 1

CRN 120998-63-2
CMF C7 H4 F3 O3 S



CM 2

CRN 74227-34-2
CMF C36 H28 S3



IT 258341-98-9P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (neg. resist contg. alkali-sol. resin, crosslinking agent, and compd. having amino and carboxyl groups)

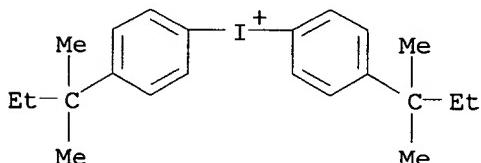
RN 258341-98-9 HCPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

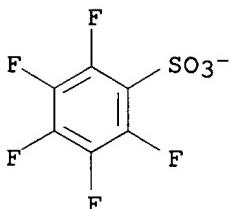
CMF C22 H30 I



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S

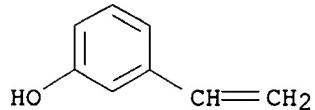
IT 24979-69-9, Poly(m-hydroxystyrene) 149614-53-9,
 m-Hydroxystyrene-p-hydroxystyrene copolymer 396098-38-7
 473313-51-8 478918-37-5

RL: TEM (Technical or engineered material use); USES (Uses)
 (neg. resist contg. alkali-sol. resin, crosslinking agent, and compd. having amino and carboxyl groups)

RN 24979-69-9 HCPLUS

CN Phenol, 3-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

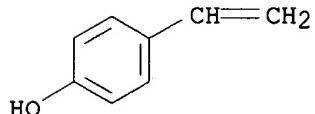
CM 1

CRN 620-18-8
CMF C8 H8 O

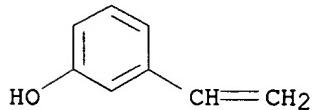
RN 149614-53-9 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 2628-17-3
CMF C8 H8 O

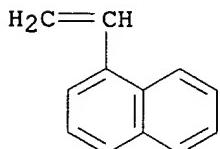
CM 2

CRN 620-18-8
CMF C8 H8 O

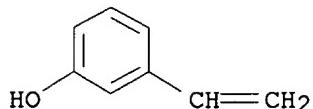
RN 396098-38-7 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 1-ethenynaphthalene (9CI) (CA INDEX NAME)

CM 1

CRN 826-74-4
CMF C12 H10

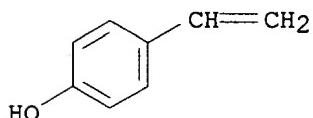
CM 2

CRN 620-18-8
CMF C8 H8 O

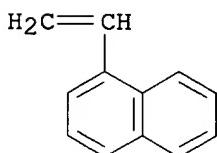
RN 473313-51-8 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 1-ethenylnaphthalene and 4-ethenylphenol
(9CI) (CA INDEX NAME)

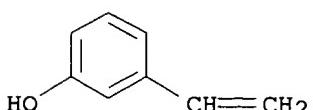
CM 1

CRN 2628-17-3
CMF C8 H8 O

CM 2

CRN 826-74-4
CMF C12 H10

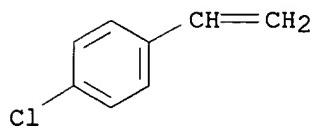
CM 3

CRN 620-18-8
CMF C8 H8 O

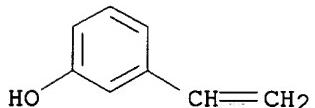
RN 478918-37-5 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 1-chloro-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 1073-67-2
CMF C8 H7 Cl

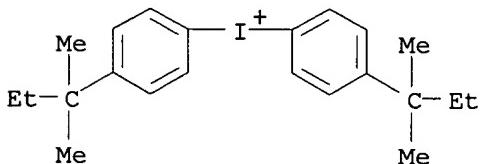
CM 2

CRN 620-18-8
CMF C8 H8 O

IT 258342-09-5P

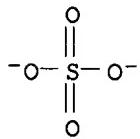
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
 RACT (Reactant or reagent)
 (prepn. of diamylphenyliodonium pentafluorobenzenesulfonate)
 RN 258342-09-5 HCAPLUS
 CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (2:1) (9CI) (CA INDEX NAME)

CM 1

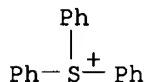
CRN 249300-51-4
CMF C22 H30 I

CM 2

CRN 14808-79-8
CMF O4 S



IT 3744-08-9P, Triphenylsulfonium iodide
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
 RACT (Reactant or reagent)
 (reaction with tetramethylammonium pentafluorobenzenesulfonate)
 RN 3744-08-9 HCPLUS
 CN Sulfonium, triphenyl-, iodide (8CI, 9CI) (CA INDEX NAME)



I-

L33 ANSWER 8 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2002:807547 HCPLUS
 DN 137:317936
 TI Electron beam or x-ray negative-working chemical amplification-type resist composition
 IN Takahashi, Omote; Shirakawa, Hiroshi; Adekawa, Yutaka
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 67 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-038
 ICS G03F007-004; H01L021-027; C07C039-15; C07C043-178
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35, 38, 46
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2002311584	A2	20021023	JP 2001-112874	20010411
PRAI JP 2001-112874		20010411		

 AB The tittle resist compn. comprises (a) a photoacid, (b) an alk. sol. resin, (c) a compd. contg. .gtoreq.1 ring structure subjected to ring-opening addn. reaction. The tittle resist compn. further contains a crosslinker, a surfactant and a N-contg. basic compd.
 ST electron beam neg chem amplification resist compn; x ray neg chem amplification resist compn
 IT Electron beam resists
 (electron beam neg.-working chem. amplification-type resist compn.)
 IT Surfactants
 (electron beam or x-ray neg.-working chem. amplification-type resist

compn. from)

IT Polysiloxanes, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electron beam or x-ray neg.-working chem. amplification-type resist
 compn. from)

IT Polyoxyalkylenes, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (tri-Ph ether; electron beam or x-ray neg.-working chem.
 amplification-type resist compn. from)

IT X-ray resists
 (x-ray neg.-working chem. amplification-type resist compn.
 from)

IT 138529-81-4 138529-84-7 144317-44-2 240424-21-9
241806-75-7 241806-76-8 258341-99-0
258872-05-8 312386-77-9 341548-86-5
343629-51-6 343629-55-0 437652-80-7
437652-81-8
 RL: CAT (Catalyst use); USES (Uses)
 (electron beam or x-ray neg.-working chem. amplification-type resist
 compn. from)

IT 75-21-8, Oxirane, uses 100-97-0, uses 109-99-9, uses 120-93-4,
 2-Imidazolidinone 484-47-9, 2,4,5-Triphenylimidazole 1675-54-3
 2002-16-6, Phenylguanidine 2451-62-9 2455-24-5 3001-72-7 3089-11-0
 13236-02-7 17557-23-2 24544-04-5, 2,6-Diisopropylaniline
24979-69-9, 3-Hydroxystyrene homopolymer 24979-70-2,
 4-Hydroxystyrene homopolymer 24979-74-6, 4-Hydroxystyrene-styrene
 copolymer 24980-18-5, 2-Hydroxystyrene homopolymer 25068-38-6
 25322-68-3D, tri-Ph ether 66072-38-6 93164-56-8 97052-23-8
 109185-69-5 122936-95-2 137462-24-9, Megafac F176 **149614-53-9**
 , 3-Hydroxystyrene-4-Hydroxystyrene copolymer 161679-94-3 162846-57-3
 168537-35-7 171429-59-7, 4-Acetoxyystyrene-4-hydroxystyrene copolymer
 185502-14-1 185502-15-2 197087-74-4 216679-67-3, Megafac R08
 321164-59-4 **396098-38-7** 473272-98-9, 3,4,5-Trihydroxystyrene-4-
 hydroxystyrene copolymer 473272-99-0, 3,5-Dihydroxystyrene-4-
 hydroxystyrene copolymer 473273-00-6
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electron beam or x-ray neg.-working chem. amplification-type resist
 compn. from)

IT **144317-44-2 240424-21-9 241806-75-7**
241806-76-8 258341-99-0 258872-05-8
312386-77-9 341548-86-5 343629-51-6
343629-55-0 437652-80-7 437652-81-8
 RL: CAT (Catalyst use); USES (Uses)
 (electron beam or x-ray neg.-working chem. amplification-type resist
 compn. from)

RN 144317-44-2 HCPLUS

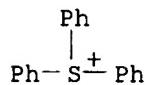
CN Sulfonium, triphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-
 butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 45187-15-3
CMF C4 F9 O3 S-O₃S-(CF₂)₃-CF₃

CM 2

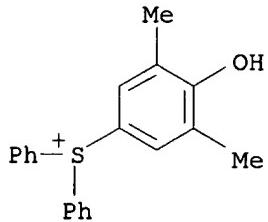
CRN 18393-55-0
 CMF C18 H15 S



RN 240424-21-9 HCAPLUS
 CN Sulfonium, (4-hydroxy-3,5-dimethylphenyl)diphenyl-, salt with
 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanесulfonic acid (1:1) (9CI) (CA INDEX
 NAME)

CM 1

CRN 127279-85-0
 CMF C20 H19 O S



CM 2

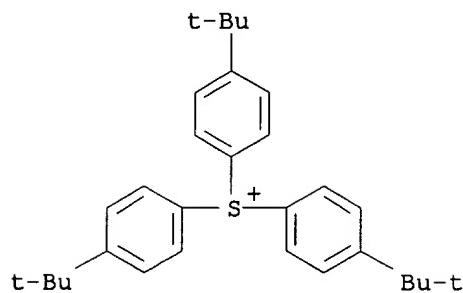
CRN 45187-15-3
 CMF C4 F9 O3 S

$-\text{O}_3\text{S}^- (\text{CF}_2)_3-\text{CF}_3$

RN 241806-75-7 HCAPLUS
 CN Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, salt with
 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanесulfonic acid (1:1) (9CI) (CA INDEX
 NAME)

CM 1

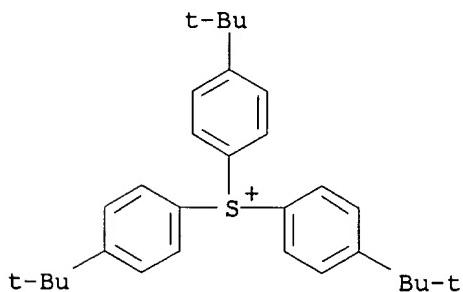
CRN 91815-56-4
 CMF C30 H39 S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S $\text{O}_3\text{S}-(\text{CF}_2)_3-\text{CF}_3$ RN 241806-76-8 HCAPLUS
CN Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 91815-56-4
CMF C30 H39 S

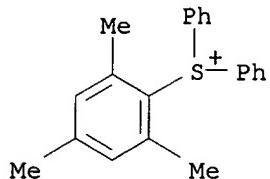
CM 2

CRN 45298-90-6
CMF C8 F17 O3 S $\text{O}_3\text{S}-(\text{CF}_2)_7-\text{CF}_3$ RN 258341-99-0 HCAPLUS
CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with

1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6
CMF C21 H21 S



CM 2

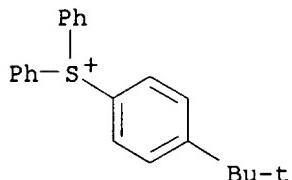
CRN 45298-90-6
CMF C8 F17 O3 S

$-\text{O}_3\text{S}- (\text{CF}_2)_7-\text{CF}_3$

RN 258872-05-8 HCAPLUS
CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX
NAME)

CM 1

CRN 66482-54-0
CMF C22 H23 S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

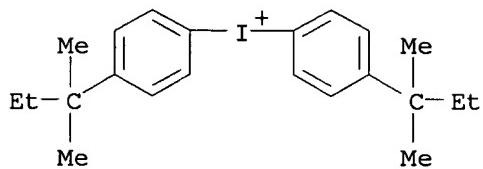
$-\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$

RN 312386-77-9 HCAPLUS
CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with

1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4
CMF C22 H30 I



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

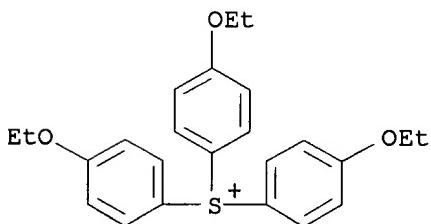
$\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

RN 341548-86-5 HCAPLUS

CN Sulfonium, tris(4-ethoxyphenyl)-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 220391-62-8
CMF C24 H27 O3 S



CM 2

CRN 45187-15-3
CMF C4 F9 O3 S

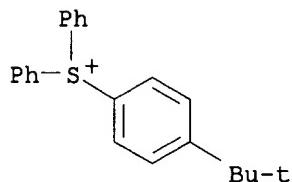
$\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

RN 343629-51-6 HCAPLUS

CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with
 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-1-octanesulfonic acid
 (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 66482-54-0
 CMF C22 H23 S



CM 2

CRN 45298-90-6
 CMF C8 F17 O3 S

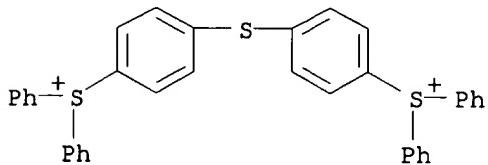
$-\text{O}_3\text{S}-(\text{CF}_2)_7-\text{CF}_3$

RN 343629-55-0 HCPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-1-octanesulfonic acid
 (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2
 CMF C36 H28 S3



CM 2

CRN 45298-90-6
 CMF C8 F17 O3 S

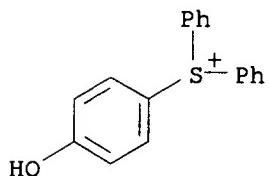
$-\text{O}_3\text{S}-(\text{CF}_2)_7-\text{CF}_3$

RN 437652-80-7 HCPLUS

CN Sulfonium, (4-hydroxyphenyl)diphenyl-, salt with
 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid
 (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 108493-51-2
 CMF C18 H15 O S



CM 2

CRN 45298-90-6
 CMF C8 F17 O3 S

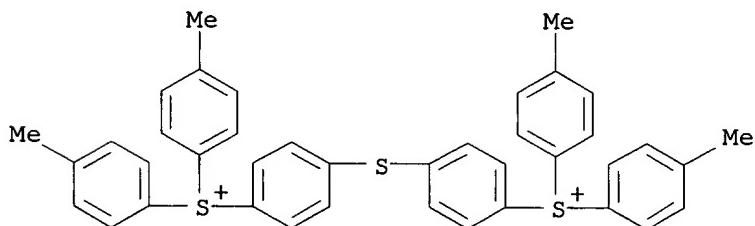
$-\text{O}_3\text{S}- (\text{CF}_2)_7 - \text{CF}_3$

RN 437652-81-8 HCPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[bis(4-methylphenyl)-, salt with
 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heneicosfluoro-1-decanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 222722-48-7
 CMF C40 H36 S3



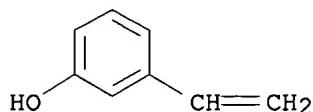
CM 2

CRN 126105-34-8
 CMF C10 F21 O3 S

$-\text{O}_3\text{S}- (\text{CF}_2)_9 - \text{CF}_3$

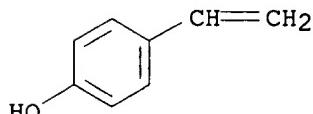
IT 24979-69-9, 3-Hydroxystyrene homopolymer 149614-53-9,
 3-Hydroxystyrene-4-Hydroxystyrene copolymer 396098-38-7
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electron beam or x-ray neg.-working chem. amplification-type resist
 compn. from)
 RN 24979-69-9 HCAPLUS
 CN Phenol, 3-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

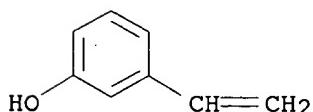
CRN 620-18-8
CMF C8 H8 O

RN 149614-53-9 HCAPLUS
 CN Phenol, 3-ethenyl-, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 2628-17-3
CMF C8 H8 O

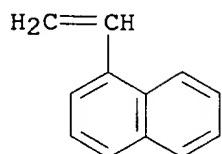
CM 2

CRN 620-18-8
CMF C8 H8 O

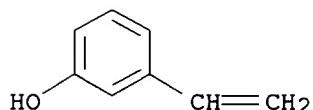
RN 396098-38-7 HCAPLUS
 CN Phenol, 3-ethenyl-, polymer with 1-ethenynaphthalene (9CI) (CA INDEX
 NAME)

CM 1

CRN 826-74-4
CMF C12 H10



CM 2

CRN 620-18-8
CMF C8 H8 O

L33 ANSWER 9 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2002:802790 HCPLUS
 DN 137:331074
 TI Electron beam or x-ray negative-working resist composition
 IN Takahashi, Akira; Adegawa, Yutaka
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 73 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-038
 ICS H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38, 46
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2002311586	A2	20021023	JP 2001-119723	20010418
PRAI JP 2001-119723		20010418		

AB The title resists compn. comprises (a) a sulfonium salt or iodonium salt having .gtoreq.1 Ph group capable of generating an acid upon receiving electron beam or x-ray, (b) an alk. sol. resin, (c) a crosslinker working on the resin upon reaction with an acid, and (d) a compd. which cleaves itself and/or in other components by receiving electron beam or x-ray but not forming Ph radical as an intermediate. The resist compn. further contains a N-contg. basic compd. and a surfactant. The resist compn. exhibited high sensitivity under high acceleration voltage conditions.
 ST electron beam x ray neg resist compn; sulfonium iodonium salt x ray neg resist compn; crosslinker fluorosurfactant surfactant resist compn
 IT Electron beam resists
 Surfactants
 X-ray resists
 (electron beam or x-ray neg.-working resist compn.)

IT Surfactants
 (fluorosurfactants; electron beam or x-ray neg.-working
 resist compn.)

IT Polysiloxanes, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (surfactant; electron beam or x-ray neg.-working
 resist compn.)

IT 161679-94-3P 162846-57-3P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (crosslinker; electron beam or x-ray neg.-working
 resist compn.)

IT 3089-11-0 32449-09-5 185502-14-1 185502-15-2 197087-74-4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (crosslinker; electron beam or x-ray neg.-working
 resist compn.)

IT 100-97-0, uses 110-89-4, Piperidine, uses 121-44-8, Triethylamine,
 uses 134-81-6 280-42-2, 2,6-Diazabicyclo[2.2.2]octane 484-47-9,
 2,4,5-Triphenylimidazole 947-19-3 1122-58-3, 4-Dimethylaminopyridine
 1592-43-4 1707-68-2 2002-16-6, Phenylguanidine 3001-72-7,
 1,5-Diazabicyclo[4.3.0]non-5-ene 6652-29-5 10373-78-1 24544-04-5
 24650-42-8 24979-69-9 26060-56-0 32238-84-9 41556-26-7,
 Bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate 55048-40-3 68400-54-4
 68688-54-0 69432-40-2 71868-10-5 75980-60-8 79044-56-7
 119137-03-0 121912-68-3 122936-95-2, 1,8-Diazabicyclo[4.3.0]non-5-ene
 137909-39-8 149614-53-9 258341-98-9
 345212-28-4 349647-01-4 396098-38-7
 420131-94-8 420131-95-9 420131-96-0
 420131-98-2 473542-90-4 473542-93-7 473542-96-0
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electron beam or x-ray neg.-working resist compn.)

IT 144317-44-2 153698-46-5 197447-16-8
 241806-76-8 258341-99-0 258872-05-8
 270563-96-7 312386-77-9 343629-51-6
 343629-55-0 437652-80-7 437652-81-8
 473542-95-9
 RL: CAT (Catalyst use); USES (Uses)
 (photoacid; electron beam or x-ray neg.-working
 resist compn.)

IT 110726-28-8, Trisp-PA
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of crosslinker for electron beam or x-ray neg
 .-working resist compn.)

IT 96-48-0, .gamma.-Butyrolactone 96-49-1, Ethylene carbonate 97-64-3,
 Ethyl lactate 108-32-7, Propylene carbonate 108-94-1, Cyclohexanone,
 uses 110-43-0, 2-Heptanone 123-86-4, Butyl acetate 1320-67-8,
 Propylene glycol monomethyl ether 84540-57-8, Propylene glycol
 monomethyl ether acetate 98516-33-7, Propylene glycol monomethyl ether
 propionate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (solvent; electron beam or x-ray neg.-working resist
 compn.)

IT 25852-90-8 137462-24-9, Megafac F176 216679-67-3, Megafac R08
 RL: TEM (Technical or engineered material use); USES (Uses)
 (surfactant; electron beam or x-ray neg.-working
 resist compn.)

IT 24979-69-9 149614-53-9 258341-98-9
 345212-28-4 349647-01-4 396098-38-7

420131-94-8 420131-95-9 420131-96-0

420131-98-2

RL: TEM (Technical or engineered material use); USES (Uses)
(electron beam or x-ray neg.-working resist compn.)

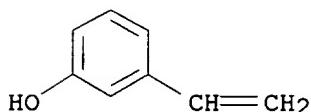
RN 24979-69-9 HCPLUS

CN Phenol, 3-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 620-18-8

CMF C8 H8 O



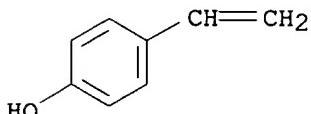
RN 149614-53-9 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 2628-17-3

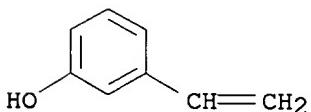
CMF C8 H8 O



CM 2

CRN 620-18-8

CMF C8 H8 O



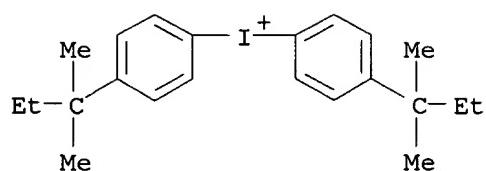
RN 258341-98-9 HCPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

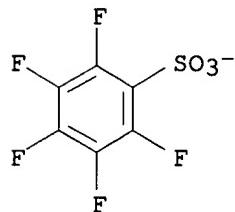
CMF C22 H30 I



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



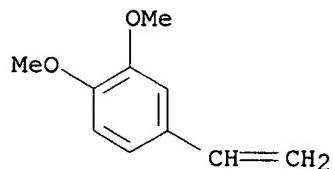
RN 345212-28-4 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 4-ethenyl-1,2-dimethoxybenzene (9CI) (CA INDEX NAME)

CM 1

CRN 6380-23-0

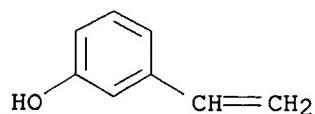
CMF C10 H12 O2



CM 2

CRN 620-18-8

CMF C8 H8 O

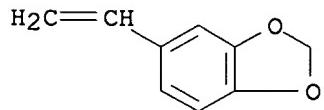


RN 349647-01-4 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI) (CA INDEX NAME)

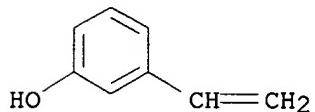
CM 1

CRN 7315-32-4
CMF C9 H8 O2



CM 2

CRN 620-18-8
CMF C8 H8 O

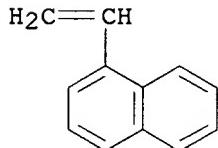


RN 396098-38-7 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 1-ethenynaphthalene (9CI) (CA INDEX NAME)

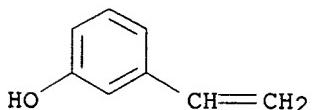
CM 1

CRN 826-74-4
CMF C12 H10



CM 2

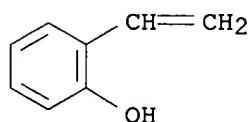
CRN 620-18-8
CMF C8 H8 O



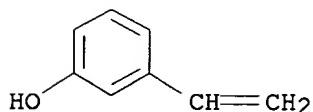
RN 420131-94-8 HCPLUS

CN Phenol, 2-ethenyl-, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 695-84-1
CMF C8 H8 O

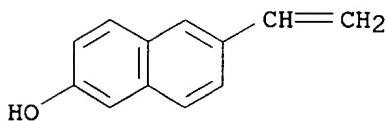
CM 2

CRN 620-18-8
CMF C8 H8 O

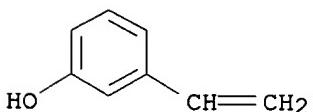
RN 420131-95-9 HCPLUS

CN 2-Naphthalenol, 6-ethenyl-, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 136896-92-9
CMF C12 H10 O

CM 2

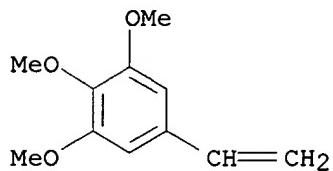
CRN 620-18-8
CMF C8 H8 O

RN 420131-96-0 HCPLUS

CN Phenol, 3-ethenyl-, polymer with ethenylbenzene and 5-ethenyl-1,2,3-trimethoxybenzene (9CI) (CA INDEX NAME)

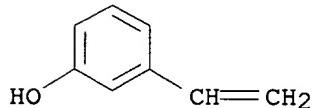
CM 1

CRN 13400-02-7
CMF C11 H14 O3



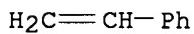
CM 2

CRN 620-18-8
CMF C8 H8 O



CM 3

CRN 100-42-5
CMF C8 H8

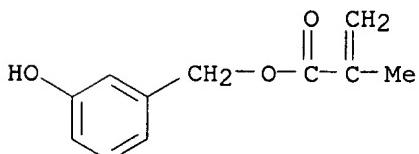


RN 420131-98-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, (3-hydroxyphenyl)methyl ester, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

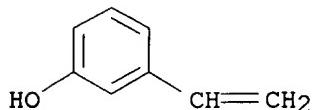
CM 1

CRN 420131-97-1
CMF C11 H12 O3



CM 2

CRN 620-18-8
 CMF C8 H8 O



IT 144317-44-2 153698-46-5 197447-16-8
 241806-76-8 258341-99-0 258872-05-8
 270563-96-7 312386-77-9 343629-51-6
 343629-55-0 437652-80-7 437652-81-8
 473542-95-9

RL: CAT (Catalyst use); USES (Uses)
 (photoacid; electron beam or x-ray neg.-working
 resist compn.)

RN 144317-44-2 HCPLUS

CN Sulfonium, triphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

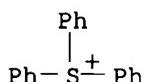
CM 1

CRN 45187-15-3
 CMF C4 F9 O3 S

 $\text{-O}_3\text{S-}(\text{CF}_2)_3\text{-CF}_3$

CM 2

CRN 18393-55-0
 CMF C18 H15 S

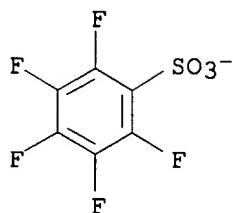


RN 153698-46-5 HCPLUS

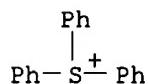
CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

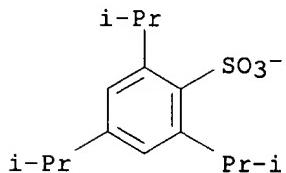
CRN 46377-88-2
 CMF C6 F5 O3 S



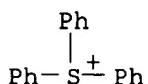
CM 2

CRN 18393-55-0
CMF C18 H15 SRN 197447-16-8 HCPLUS
CN Sulfonium, triphenyl-, salt with 2,4,6-tris(1-methylethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

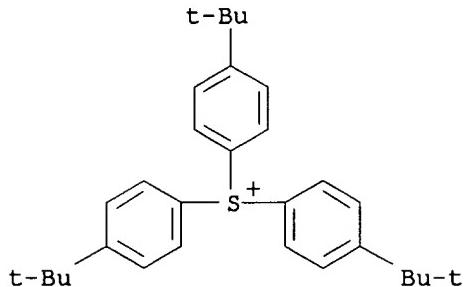
CRN 46950-23-6
CMF C15 H23 O3 S

CM 2

CRN 18393-55-0
CMF C18 H15 SRN 241806-76-8 HCPLUS
CN Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 91815-56-4
 CMF C30 H39 S



CM 2

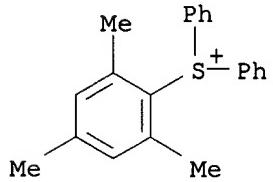
CRN 45298-90-6
 CMF C8 F17 O3 S

 $-\text{O}_3\text{S}- (\text{CF}_2)_7 - \text{CF}_3$

RN 258341-99-0 HCAPLUS
 CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with
 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-1-octanesulfonic acid
 (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47191-44-6
 CMF C21 H21 S



CM 2

CRN 45298-90-6
 CMF C8 F17 O3 S

 $-\text{O}_3\text{S}- (\text{CF}_2)_7 - \text{CF}_3$

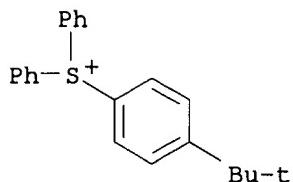
RN 258872-05-8 HCAPLUS

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with
 1,1,2,2,3,3,4,4-nonafluoro-1-butanесulfonic acid (1:1) (9CI) (CA INDEX
 NAME)

CM 1

CRN 66482-54-0
 CMF C22 H23 S



CM 2

CRN 45187-15-3
 CMF C4 F9 O3 S

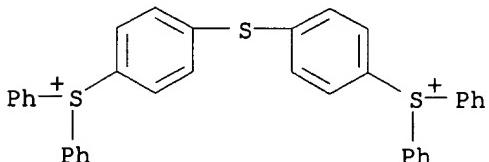
-O₃S-(CF₂)₃-CF₃

RN 270563-96-7 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
 pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

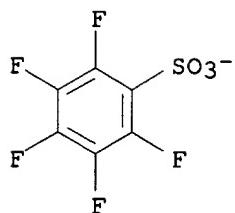
CM 1

CRN 74227-34-2
 CMF C36 H28 S3



CM 2

CRN 46377-88-2
 CMF C6 F5 O3 S



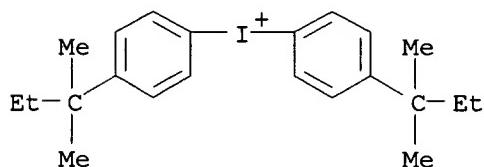
RN 312386-77-9 HCAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX
NAME)

CM 1

CRN 249300-51-4

CMF C22 H30 I



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

-O3S-(CF2)3-CF3

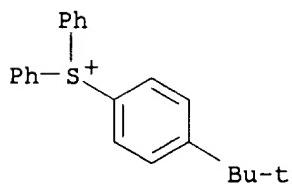
RN 343629-51-6 HCAPLUS

CN Sulfonium, [4-(1,1-dimethylethyl)phenyl]diphenyl-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 66482-54-0

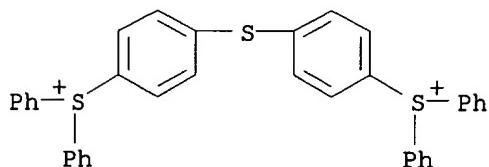
CMF C22 H23 S



CM 2

CRN 45298-90-6
CMF C8 F17 O3 S-O₃S-(CF₂)₇-CF₃RN 343629-55-0 HCPLUS
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid
(1:2) (9CI) (CA INDEX NAME)

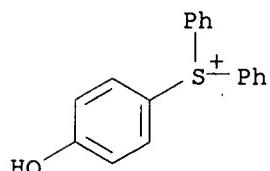
CM 1

CRN 74227-34-2
CMF C36 H28 S3

CM 2

CRN 45298-90-6
CMF C8 F17 O3 S-O₃S-(CF₂)₇-CF₃RN 437652-80-7 HCPLUS
CN Sulfonium, (4-hydroxyphenyl)diphenyl-, salt with
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

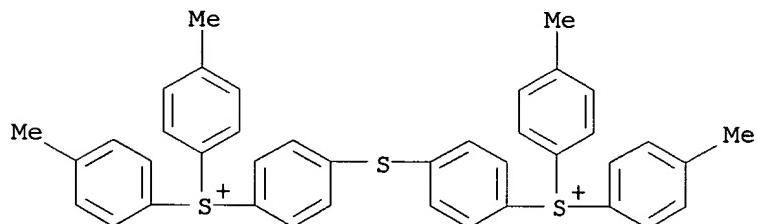
CM 1

CRN 108493-51-2
CMF C18 H15 O S

CM 2

CRN 45298-90-6
CMF C8 F17 O3 S-O₃S-(CF₂)₇-CF₃RN 437652-81-8 HCPLUS
CN Sulfonium, (thiodi-4,1-phenylene)bis[bis(4-methylphenyl)-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heneicosfluoro-1-decanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

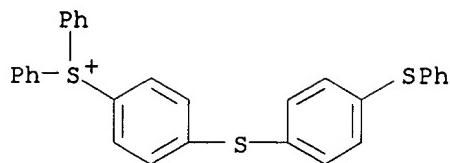
CRN 222722-48-7
CMF C40 H36 S3

CM 2

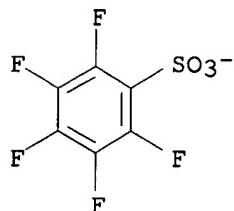
CRN 126105-34-8
CMF C10 F21 O3 S-O₃S-(CF₂)₉-CF₃RN 473542-95-9 HCPLUS
CN Sulfonium, diphenyl[4-[[4-(phenylthio)phenyl]thio]phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 101200-54-8
CMF C30 H23 S3

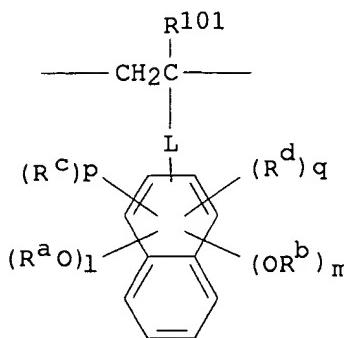


CM 2

CRN 46377-88-2
CMF C6 F5 O3 S

L33 ANSWER 10 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2002:802789 HCPLUS
 DN 137:331073
 TI Electron beam or x-ray negative-working resist composition
 IN Adegawa, Yutaka
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokyo Koho, 45 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-038
 ICS G03F007-038; C08K005-00; C08L101-00; G03F007-004; G03F007-033;
 H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35, 38, 46
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
PI JP 2002311585	A2	20021023	JP 2001-114335	20010412
PRAI JP 2001-114335		20010412		
GI				



- AB The title resist compn. comprises (a) an alk. sol. resin having a repeating unit I ($R101 = H, Me, Et$; $L = \text{divalent bonding group}$; $R_a, b = C1-12 \text{ alkyl, cyclic alkyl, etc.}; R_c, d = C1-12 \text{ alkyl, cyclic alkyl, etc.}$; $l, m = \text{integer } 0-3; l + m \leq 4$; $p, q = \text{integer } 0-3; p + q \leq 4$; and $l + m + p + q \leq 7$), (b) a crosslinker, (c) a photoacid, (d) a F- and/or Si-based surfactant. The component (c) is sulfonic acid salts of sulfonium or iodonium, or a sulfonate of N-hydroxyimide. The resist compn. further contains an org. basic compd. A solvent used in the resist includes propylene glycol monomethyl ether acetate. The resist compn. provided a fine resist pattern having a rectangular cross section.
- ST electron beam x ray **neg. resist** compn; silicon fluorine surfactant resist compn
- IT Electron beam resists
Surfactants
X-ray resists
(electron beam or x-ray **neg.-working resist** compn.)
- IT Surfactants
(fluorosurfactants; electron beam or x-ray **neg.-working resist** compn.)
- IT Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactant; electron beam or x-ray **neg.-working resist** compn.)
- IT 79-30-1, Isobutyric acid chloride 123-30-8, p-Aminophenol
RL: RCT (Reactant); RACT (Reactant or reagent)
(crosslinker in electron beam or x-ray **neg.-working resist** compn.)
- IT 484-47-9 1122-58-3, 4-Dimethylaminopyridine 3001-72-7 244057-73-6
321164-59-4 345212-56-8 345212-61-5 345212-63-7 345212-64-8
345212-73-9 345212-75-1 **420131-95-9** 425422-38-4
473313-47-2 **473313-48-3** **473313-49-4**
473313-50-7 **473313-51-8** **473313-52-9**
473313-53-0 **473313-54-1** **473313-55-2**
473313-56-3 **473313-57-4** **473313-58-5**
473313-60-9 473313-61-0 473313-63-2 473313-65-4 473313-67-6
473313-69-8 473313-71-2 473313-73-4 473313-75-6 473313-77-8
RL: TEM (Technical or engineered material use); USES (Uses)
(electron beam or x-ray **neg.-working resist** compn.)
- IT 19361-97-8 23928-87-2 73674-58-5 76656-49-0 138046-33-0
138046-36-3 142096-70-6 **153698-46-5** 153698-67-0
154220-26-5 199432-75-2 205514-96-1 335385-82-5 473313-78-9
RL: CAT (Catalyst use); USES (Uses)

(photoacid; electron beam or x-ray neg.-working
resist compn.)

IT 84540-57-8, Propylene glycol monomethyl ether acetate
RL: TEM (Technical or engineered material use); USES (Uses)
(solvent; electron beam or x-ray neg.-working resist
compn.)

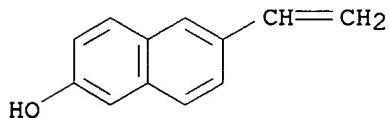
IT 420131-95-9 473313-47-2 473313-48-3
473313-49-4 473313-51-8 473313-52-9
473313-53-0 473313-54-1 473313-55-2
473313-56-3 473313-57-4 473313-58-5
RL: TEM (Technical or engineered material use); USES (Uses)
(electron beam or x-ray neg.-working resist compn.)

RN 420131-95-9 HCAPLUS

CN 2-Naphthalenol, 6-ethenyl-, polymer with 3-ethenylphenol (9CI) (CA INDEX
NAME)

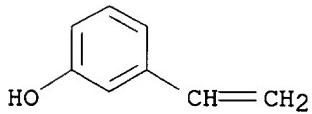
CM 1

CRN 136896-92-9
CMF C12 H10 O



CM 2

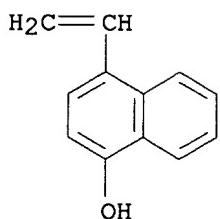
CRN 620-18-8
CMF C8 H8 O



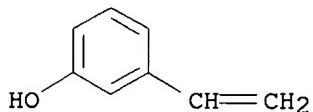
RN 473313-47-2 HCAPLUS
CN 1-Naphthalenol, 4-ethenyl-, polymer with 3-ethenylphenol (9CI) (CA INDEX
NAME)

CM 1

CRN 153233-63-7
CMF C12 H10 O



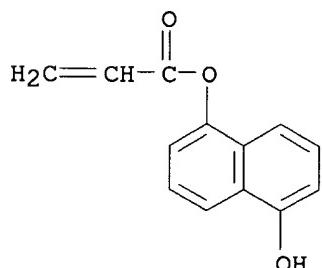
CM 2

CRN 620-18-8
CMF C8 H8 O

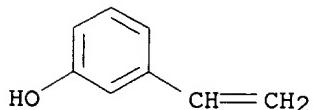
RN 473313-48-3 HCAPLUS

CN 2-Propenoic acid, 5-hydroxy-1-naphthalenyl ester, polymer with
3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 345212-66-0
CMF C13 H10 O3

CM 2

CRN 620-18-8
CMF C8 H8 O

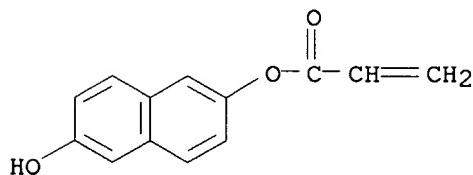
RN 473313-49-4 HCAPLUS

CN 2-Propenoic acid, 6-hydroxy-2-naphthalenyl ester, polymer with
3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 345212-68-2

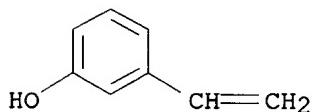
CMF C13 H10 O3



CM 2

CRN 620-18-8

CMF C8 H8 O



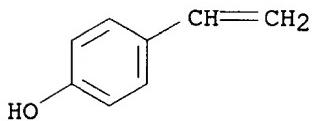
RN 473313-51-8 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 1-ethenylnaphthalene and 4-ethenylphenol
(9CI) (CA INDEX NAME)

CM 1

CRN 2628-17-3

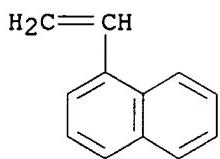
CMF C8 H8 O



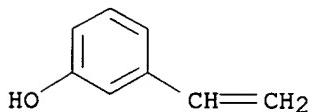
CM 2

CRN 826-74-4

CMF C12 H10



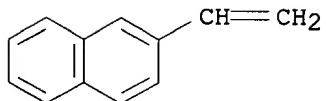
CM 3

CRN 620-18-8
CMF C8 H8 O

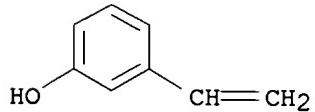
RN 473313-52-9 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 2-ethenylnaphthalene (9CI) (CA INDEX NAME)

CM 1

CRN 827-54-3
CMF C12 H10

CM 2

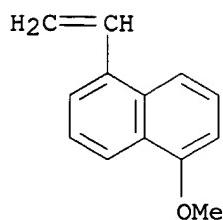
CRN 620-18-8
CMF C8 H8 O

RN 473313-53-0 HCAPLUS

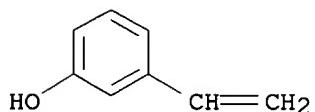
CN Phenol, 3-ethenyl-, polymer with 1-ethenyl-5-methoxynaphthalene (9CI) (CA INDEX NAME)

CM 1

CRN 105903-84-2
CMF C13 H12 O



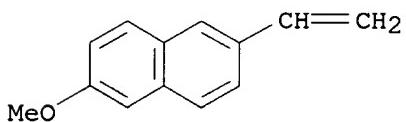
CM 2

CRN 620-18-8
CMF C₈ H₈ O

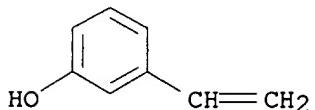
RN 473313-54-1 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 2-ethenyl-6-methoxynaphthalene (9CI) (CA INDEX NAME)

CM 1

CRN 63444-51-9
CMF C₁₃ H₁₂ O

CM 2

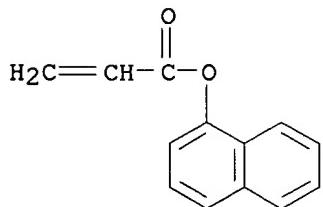
CRN 620-18-8
CMF C₈ H₈ O

RN 473313-55-2 HCPLUS

CN 2-Propenoic acid, 1-naphthalenyl ester, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

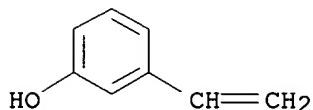
CM 1

CRN 20069-66-3
 CMF C13 H10 O2



CM 2

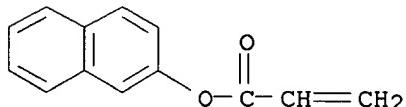
CRN 620-18-8
 CMF C8 H8 O



RN 473313-56-3 HCAPLUS
 CN 2-Propenoic acid, 2-naphthalenyl ester, polymer with 3-ethenylphenol (9CI)
 (CA INDEX NAME)

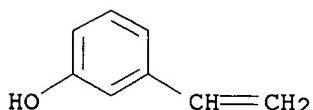
CM 1

CRN 52684-34-1
 CMF C13 H10 O2



CM 2

CRN 620-18-8
 CMF C8 H8 O



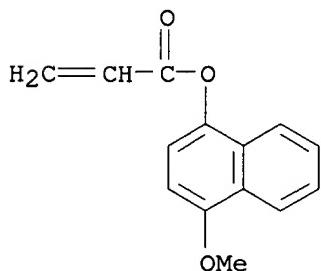
RN 473313-57-4 HCAPLUS

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

CN 2-Propenoic acid, 4-methoxy-1-naphthalenyl ester, polymer with
3-ethenylphenol (9CI) (CA INDEX NAME)

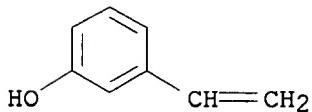
CM 1

CRN 116688-47-2
CMF C14 H12 O3



CM 2

CRN 620-18-8
CMF C8 H8 O

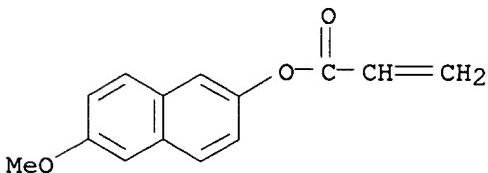


RN 473313-58-5 HCPLUS

CN 2-Propenoic acid, 6-methoxy-2-naphthalenyl ester, polymer with
3-ethenylphenol (9CI) (CA INDEX NAME)

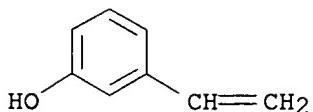
CM 1

CRN 345212-72-8
CMF C14 H12 O3



CM 2

CRN 620-18-8
CMF C8 H8 O



IT 153698-46-5

RL: CAT (Catalyst use); USES (Uses)
 (photoacid; electron beam or x-ray **neg.-working resist** compon.)

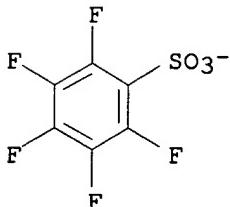
RN 153698-46-5 HCPLUS

CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
 (9CI) (CA INDEX NAME)

CM 1

CRN 46377-88-2

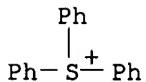
CMF C6 F5 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



L33 ANSWER 11 OF 25 HCPLUS COPYRIGHT 2003 ACS

AN 2002:364224 HCPLUS

DN 136:393265

TI Chemically-amplified **negative-working resist** compositions containing radical generators

IN Adegawa, Yutaka

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 83 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-038

ICS C08K005-00; C08L101-00; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other

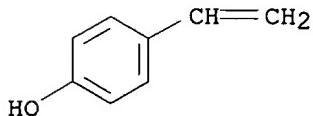
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002139836	A2	20020517	JP 2000-336334	20001102
PRAI	JP 2000-336334		20001102		
AB	The compns., which show high sensitivity, high resoln., rectangular pattern profile, and PCD (post coating delay) and PED (post exposure delay) stability, contain (a) compds. which directly or indirectly generate radicals upon irradn. with energy ray. The compns. may contain (b) compds. which generate acids upon irradn. with energy ray, (c) alkali-sol. resins, and (d) crosslinking agents reacting by acids.				
ST	chem amplified neg resist radical generator; tetrahydrofurfuryl benzenetricarboxylate radical generator neg resist				
IT	Electron beam resists				
	Resists				
	(neg.-working; chem.-amplified neg.-working resist compns. contg. compds. which generate radicals upon irradn.)				
IT	105649-65-8DP, 3-t-Butoxystyrene homopolymer, hydrolyzed 149614-53-9P 169549-85-3DP, hydrolyzed 321164-59-4P 345212-27-3P 345212-28-4P 345212-30-8P 345212-36-4P 345212-54-6P 345212-55-7P 345212-56-8P 345212-60-4P 345212-61-5P 345212-63-7P 345212-64-8P 345212-67-1P 345212-69-3P 345212-71-7P 345212-73-9P 345212-74-0P 345212-77-3P 345212-78-4P 345212-80-8P 345212-86-4P 345212-89-7P 345212-91-1P 345212-92-2P 345212-93-3P 345212-95-5P 345212-97-7P 345212-99-9P 349619-43-8P 425422-24-8DP, 4-t-Butoxystyrene-3,4-dimethoxystyrene copolymer, hydrolyzed 425422-26-0P 425422-30-6P 425422-38-4P 425422-40-8P 425422-53-3P 425422-59-9P 425422-62-4P 425422-65-7P 425422-68-0P 425615-29-8DP, hydrolyzed RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (alkali-sol. resin; chem.-amplified neg.-working resist compns. contg. compds. which generate radicals upon irradn.)				
IT	60-24-2 64-69-7 75-62-7 75-66-1 98-13-5 98-85-1 100-51-6, Benzinemethanol, uses 107-96-0 118-75-2, uses 140-11-4 304-88-1 484-47-9, 2,4,5-Triphenylimidazole 507-63-1 524-38-9 530-48-3 539-74-2 556-56-9 558-13-4, Carbon tetrabromide 586-61-8 599-99-5 629-27-6 1122-58-3, 4-Dimethylaminopyridine 1155-51-7 1212-08-4 1746-13-0 2043-57-4 2444-68-0 2885-00-9, 1-Octadecanethiol 3001-72-7, 1,5-Diazabicyclo[4.3.0]non-5-ene 3698-94-0 4623-50-1 5586-15-2 6674-22-2, 1,8-Diazabicyclo[5.4.0]undec-7-ene 7031-93-8 10193-99-4 10478-23-6 10568-85-1 21545-54-0 45708-67-6 60012-29-5 61758-07-4, 2-Octene-1-thiol 62753-17-7 425421-73-4 425421-79-0 425421-81-4 425421-83-6 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses) (chem.-amplified neg.-working resist compns. contg. compds. which generate radicals upon irradn.)				
IT	161679-94-3P 161679-95-4P 161679-98-7P 162846-57-3P 185502-11-8P 185502-14-1P 185502-15-2P 197087-73-3P 197087-74-4P RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (crosslinking agent; chem.-amplified neg.-working resist compns. contg. compds. which generate radicals upon				

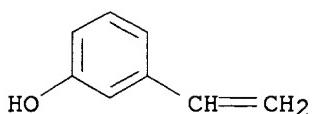
- irradn.)
- IT 110726-28-8P, Trisp-PA
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (in prepn. of crosslinking agent; chem.-amplified **neg**.-working **resist** compns. contg. compds. which generate radicals upon irradn.)
- IT 832-53-1, Pentafluorobenzenesulfonyl chloride 2049-95-8,
 tert-Amylbenzene 4270-70-6, Triphenylsulfonium chloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (in prepn. of photoacid generator; chem.-amplified **neg**.-working **resist** compns. contg. compds. which generate radicals upon irradn.)
- IT 258341-98-9P 270563-93-4P 270563-96-7P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (photoacid generator; chem.-amplified **neg**.-working **resist** compns. contg. compds. which generate radicals upon irradn.)
- IT 194999-82-1 279244-45-0
 RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)
 (photoacid generator; chem.-amplified **neg**.-working **resist** compns. contg. compds. which generate radicals upon irradn.)
- IT 149614-53-9P 345212-28-4P 345212-30-8P
 349619-43-8P 425422-30-6P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (alkali-sol. resin; chem.-amplified **neg**.-working **resist** compns. contg. compds. which generate radicals upon irradn.)
- RN 149614-53-9 HCAPLUS
- CN Phenol, 3-ethenyl-, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 2628-17-3
CMF C8 H8 O

CM 2

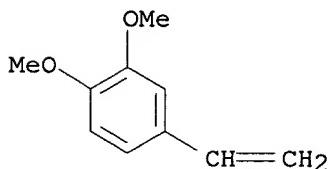
CRN 620-18-8
CMF C8 H8 O



RN 345212-28-4 HCAPLUS
 CN Phenol, 3-ethenyl-, polymer with 4-ethenyl-1,2-dimethoxybenzene (9CI) (CA INDEX NAME)

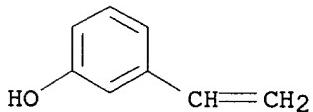
CM 1

CRN 6380-23-0
 CMF C10 H12 O2



CM 2

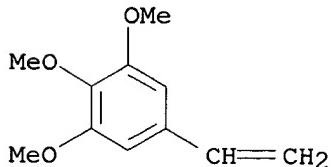
CRN 620-18-8
 CMF C8 H8 O



RN 345212-30-8 HCAPLUS
 CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,2,3-trimethoxybenzene (9CI) (CA INDEX NAME)

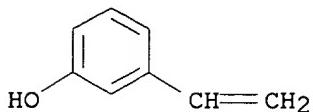
CM 1

CRN 13400-02-7
 CMF C11 H14 O3



CM 2

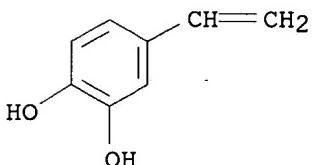
CRN 620-18-8
CMF C8 H8 O



RN 349619-43-8 HCPLUS
CN 1,2-Benzenediol, 4-ethenyl-, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

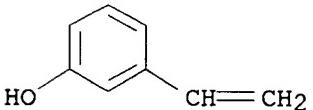
CM 1

CRN 6053-02-7
CMF C8 H8 O2



CM 2

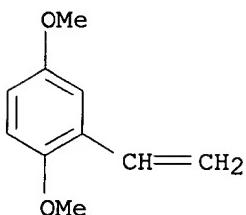
CRN 620-18-8
CMF C8 H8 O



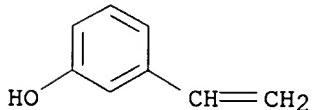
RN 425422-30-6 HCPLUS
CN Phenol, 3-ethenyl-, polymer with 2-ethenyl-1,4-dimethoxybenzene (9CI) (CA INDEX NAME)

CM 1

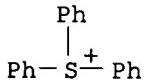
CRN 14568-68-4
CMF C10 H12 O2



CM 2

CRN 620-18-8
CMF C8 H8 O

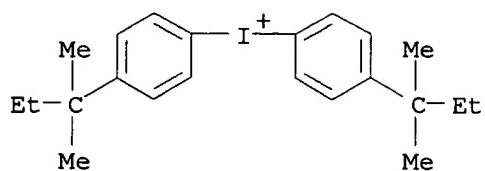
IT **4270-70-6**, Triphenylsulfonium chloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (in prepn. of photoacid generator; chem.-amplified **neg**.-working **resist** compns. contg. compds. which generate radicals upon irradn.)
 RN 4270-70-6 HCPLUS
 CN Sulfonium, triphenyl-, chloride (8CI, 9CI) (CA INDEX NAME)

Cl⁻

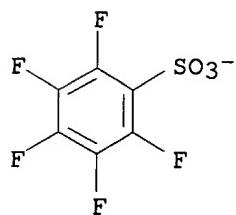
IT **258341-98-9P 270563-93-4P 270563-96-7P**
 RL: CAT (Catalyst use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (photoacid generator; chem.-amplified **neg**.-working **resist** compns. contg. compds. which generate radicals upon irradn.)
 RN 258341-98-9 HCPLUS
 CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4
CMF C22 H30 I



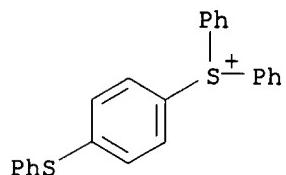
CM 2

CRN 46377-88-2
CMF C6 F5 O3 S

RN 270563-93-4 HCPLUS

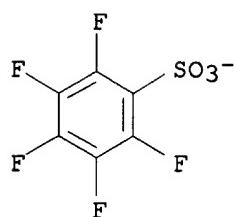
CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47480-44-4
CMF C24 H19 S2

CM 2

CRN 46377-88-2
CMF C6 F5 O3 S



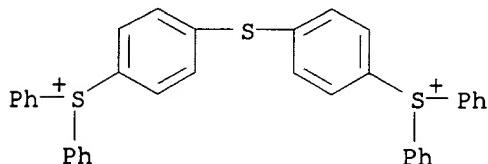
RN 270563-96-7 HCPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2

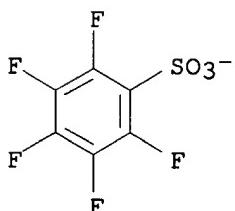
CMF C36 H28 S3



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



IT 194999-82-1 279244-45-0

RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES
(Uses)

(photoacid generator; chem.-amplified neg.-working
resist compns. contg. compds. which generate radicals upon
irradn.)

RN 194999-82-1 HCPLUS

CN Iodonium, diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-
butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

WALKE 09/942768

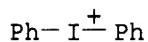
Page 101

CRN 45187-15-3
CMF C4 F9 O3 S

-O₃S-(CF₂)₃-CF₃

CM 2

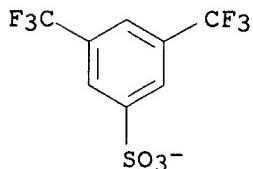
CRN 10182-84-0
CMF C12 H10 I



RN 279244-45-0 HCPLUS
CN Iodonium, bis(4-chlorophenyl)-, salt with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

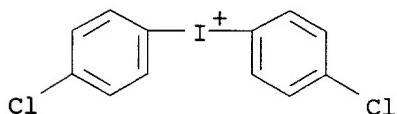
CM 1

CRN 213740-84-2
CMF C8 H3 F6 O3 S



CM 2

CRN 46449-60-9
CMF C12 H8 Cl2 I



L33 ANSWER 12 OF 25 HCPLUS COPYRIGHT 2003 ACS
AN 2002:345225 HCPLUS
DN 136:361819
TI Chemically amplified **negative resist** compositions for electron-beam or x-ray lithography
IN Adegawa, Yutaka
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 44 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

ICM G03F007-038

ICS C08K005-13; C08K005-16; C08K005-375; C08K005-42; C08L025-18;
C08L061-32; C08L063-00; C08L101-06; G03F007-004; H01L021-027CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reproductive Processes)

Section cross-reference(s): 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002131908	A2	20020509	JP 2000-320866	20001020
PRAI	JP 2000-320866		20001020		

OS MARPAT 136:361819

AB The compns., showing high resoln., high sensitivity, and good stability in post-coating and -exposure delay, comprise (A) N-hydroxylimide sulfonates (Markush given) as radiation-sensitive acid generators, (B) water-insol. and alk.-soln.-sol. resins (Markush given) having Ph with OH at meta positions and satisfy polydispersity 1.0-1.5, and (C) acid-sensitive crosslinking agents.

ST amplified electron beam x ray resist; hydroxyimide sulfonate radiation sensitive acid generator; butoxystyrene polymer hydrolyzed chem amplified resist; methoxymethylated phenol crosslinker x ray resist

IT Crosslinking agents

Electron beam lithography

Semiconductor device fabrication

X-ray lithography

(chem. amplified **neg. resists** contg.

N-hydroxylimide sulfonates for electron-beam or x-ray lithog.)

IT Aminoplasts

RL: TEM (Technical or engineered material use); USES (Uses)

(hydroxymethylated or acyloxymethylated derivs., crosslinking agents;

chem. amplified **neg. resists** contg. N-hydroxylimide sulfonates for electron-beam or x-ray lithog.)IT **Resists**(radiation-sensitive, **neg.**; **neg.**-working chem.amplified **resist** compns. for electron-beam or x-ray lithog.)IT 10409-07-1 14159-45-6 42880-05-7 54769-40-3 **66003-76-7**72015-32-8 **144317-44-2** 154220-26-5 **349619-92-7**420131-99-3 420132-00-9 420132-01-0 **420132-02-1**

RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)

(acid generators; chem. amplified **neg. resists**

contg. N-hydroxylimide sulfonates for electron-beam or x-ray lithog.)

IT 105649-65-8DP, 3-tert-Butoxystyrene homopolymer, hydrolyzed

155168-25-5DP, hydrolyzed 406685-56-1DP, hydrolyzed 406685-57-2DP,
hydrolyzed

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(chem. amplified **neg. resists** contg.

N-hydroxylimide sulfonates for electron-beam or x-ray lithog.)

IT 32238-84-9 121912-68-3 **345212-30-8** **420131-94-8****420131-95-9** **420131-96-0** **420131-98-2**

RL: TEM (Technical or engineered material use); USES (Uses)

(chem. amplified **neg. resists** contg.

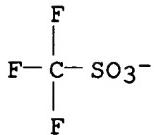
N-hydroxylimide sulfonates for electron-beam or x-ray lithog.)

IT 161679-94-3P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (crosslinking agents; chem. amplified **neg. resists**
 contg. N-hydroxylimide sulfonates for electron-beam or x-ray lithog.)
 IT 57-13-6D, Urea, hydroxymethylated or acyloxymethylated derivs.
 108-78-1D, Melamine, hydroxymethylated or acyloxymethylated derivs.
 108-95-2D, Phenol, hydroxymethylated or acyloxymethylated derivs.
 3089-11-0, Hexamethoxymethylmelamine 9003-08-1D, Melamine resin,
 hydroxymethylated or acyloxymethylated derivs. 9011-05-6D, Urea resin,
 hydroxymethylated or acyloxymethylated derivs. 185502-14-1 185502-15-2
 197087-74-4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (crosslinking agents; chem. amplified **neg. resists**
 contg. N-hydroxylimide sulfonates for electron-beam or x-ray lithog.)
 IT 110726-28-8, Trisp PA
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (in prepn. of methoxymethyl-bearing PhOH derivs. for crosslinking
 agents of chem. amplified **neg. resists**)
 IT 66003-76-7 144317-44-2 349619-92-7
420132-02-1
 RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES
 (Uses)
 (acid generators; chem. amplified **neg. resists**
 contg. N-hydroxylimide sulfonates for electron-beam or x-ray lithog.)
 RN 66003-76-7 HCAPLUS
 CN Iodonium, diphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
 (CA INDEX NAME)

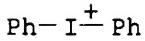
CM 1

CRN 37181-39-8
 CMF C F3 O3 S



CM 2

CRN 10182-84-0
 CMF C12 H10 I



RN 144317-44-2 HCAPLUS
 CN Sulfonium, triphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-
 butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

WALKE 09/942768

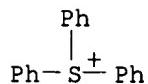
Page 104

CRN 45187-15-3
CMF C4 F9 O3 S

-O₃S-(CF₂)₃-CF₃

CM 2

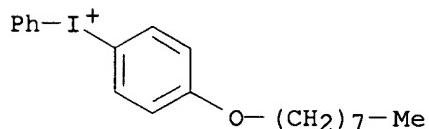
CRN 18393-55-0
CMF C18 H15 S



RN 349619-92-7 HCPLUS
CN Iodonium, [4-(octyloxy)phenyl]phenyl-, salt with 4-fluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

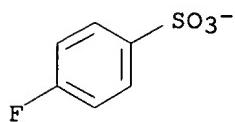
CM 1

CRN 121239-74-5
CMF C20 H26 I O



CM 2

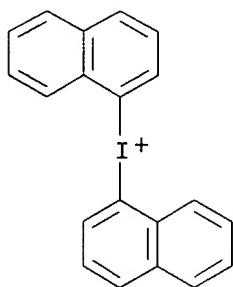
CRN 61657-38-3
CMF C6 H4 F O3 S



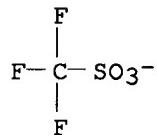
RN 420132-02-1 HCPLUS
CN Iodonium, di-1-naphthalenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 137337-65-6
CMF C20 H14 I

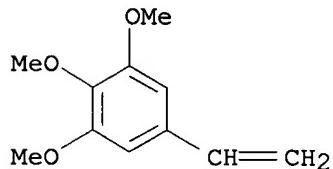


CM 2

CRN 37181-39-8
CMF C F3 O3 S

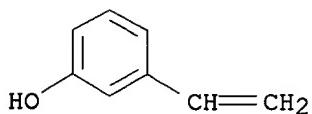
IT 345212-30-8 420131-94-8 420131-95-9
420131-96-0 420131-98-2
 RL: TEM (Technical or engineered material use); USES (Uses)
 (chem. amplified neg. resists contg.
 N-hydroxylimide sulfonates for electron-beam or x-ray lithog.)
 RN 345212-30-8 HCAPLUS
 CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,2,3-trimethoxybenzene (9CI)
 (CA INDEX NAME)

CM 1

CRN 13400-02-7
CMF C11 H14 O3

CM 2

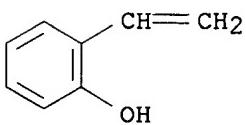
CRN 620-18-8
CMF C8 H8 O



RN 420131-94-8 HCPLUS
 CN Phenol, 2-ethenyl-, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

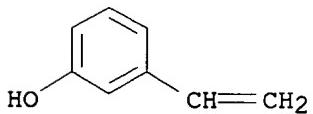
CM 1

CRN 695-84-1
 CMF C8 H8 O



CM 2

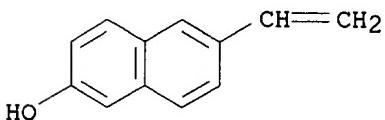
CRN 620-18-8
 CMF C8 H8 O



RN 420131-95-9 HCPLUS
 CN 2-Naphthalenol, 6-ethenyl-, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

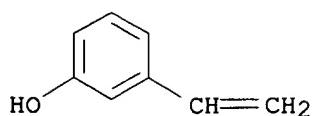
CM 1

CRN 136896-92-9
 CMF C12 H10 O



CM 2

CRN 620-18-8
 CMF C8 H8 O



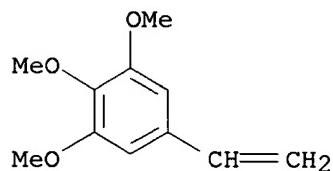
RN 420131-96-0 HCPLUS

CN Phenol, 3-ethenyl-, polymer with ethenylbenzene and 5-ethenyl-1,2,3-trimethoxybenzene (9CI) (CA INDEX NAME)

CM 1

CRN 13400-02-7

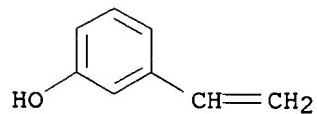
CMF C11 H14 O3



CM 2

CRN 620-18-8

CMF C8 H8 O



CM 3

CRN 100-42-5

CMF C8 H8

 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$

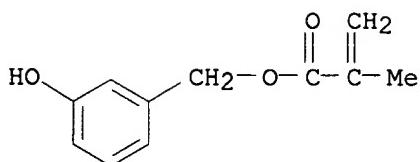
RN 420131-98-2 HCPLUS

CN 2-Propenoic acid, 2-methyl-, (3-hydroxyphenyl)methyl ester, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

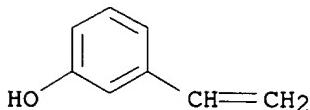
CM 1

CRN 420131-97-1

CMF C11 H12 O3



CM 2

CRN 620-18-8
CMF C8 H8 O

L33 ANSWER 13 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2002:253086 HCPLUS
 DN 136:301771
 TI **Negative resist** composition for ultra-microlithography
applicant
 IN Uenishi, Kazuya
 PA Fuji Photo Film Co., Ltd., Japan
 SO Eur. Pat. Appl., 50 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM G03F007-004
 ICS G03F007-038
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1193555	A1	20020403	EP 2001-120664	20010831
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002148806	A2	20020522	JP 2001-264111	20010831
	US 2002061462	A1	20020523	US 2001-942768	20010831
PRAI	JP 2000-263815	A	20000831		
OS	MARPAT 136:301771				
AB	The invention relates to a neg. resist compn. suitable for use in ultra-microlithog. for producing VLSI and microchips and other photofabrication processes and in processing semiconductor devices using high-energy beams such as an electron beam. Fine patterns can be formed using the resist compn. in x-ray lithog. The compn. comprises: an alkali-sol. resin; a compd. capable of generating an acid upon irradn.; a crosslinking agent capable of crosslinking by the action of an acid; and a solvent mixt. contg.: .gtoreq.1 solvent selected from the group (a) ; and .gtoreq.1 selected from the group consisting of groups (b) and (c): (a) a propylene glycol monoalkyl ether carboxylate; (b) a propylene glycol				

monoalkyl ether, an alkyl lactate, an acetic ester, a chain ketone and an alkyl alkoxypropionate; and (c) a .gamma.-butyrolactone, an ethylene carbonate and a propylene carbonate.

ST neg photoresist alkali soluble resin crosslinking agent semiconductor device; electron beam lithog microchip photoresist polystyrene glycol ether surfactant

IT Electron beam lithography
Negative photoresists
X-ray lithography
(neg. photoresist compn. for x-ray/electron-beam lithog. contg. alkali-sol. resin and crosslinking agent and surfactant)

IT Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(neg. photoresist compn. for x-ray/electron-beam lithog. contg. alkali-sol. resin and crosslinking agent and surfactant)

IT Phenolic resins, uses
RL: NUU (Other use, unclassified); USES (Uses)
(novolak; neg. photoresist compn. for x-ray/electron-beam lithog. contg. alkali-sol. resin and crosslinking agent and surfactant)

IT Fluoropolymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(surfactants; neg. photoresist compn. for x-ray/electron-beam lithog. contg. alkali-sol. resin and crosslinking agent and surfactant)

IT 66003-78-9P 406913-96-0P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acid-generating agent; alkali-sol. resin contg. styrene polymer for neg. photoresist compn. for x-ray/electron-beam lithog.)

IT 270563-92-3 270563-93-4 270563-96-7
279244-39-2 349619-92-7 349647-26-3
389859-77-2 398457-16-4 406914-01-0
RL: TEM (Technical or engineered material use); USES (Uses)
(acid-generating agent; alkali-sol. resin contg. styrene polymer for neg. photoresist compn. for x-ray/electron-beam lithog.)

IT 153698-46-5P 258341-98-9P 270564-02-8P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acid-generating agent; alkali-sol. resin contg. styrene polymer for neg. resist compn. for x-ray/electron-beam lithog.)

IT 3744-08-9P, Triphenylsulfonium iodide 258342-09-5P
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(alkali-sol. resin contg. styrene polymer for neg. photoresist compn. for x-ray/electron-beam lithog.)

IT 75-59-2, Tetramethylammonium hydroxide 832-53-1,
Pentafluorobenzenesulfonyl chloride 945-51-7, Diphenyl sulfoxide 2049-95-8, tert-Amylbenzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkali-sol. resin contg. styrene polymer for neg. photoresist compn. for x-ray/electron-beam lithog.)

IT 24979-69-9P 24979-70-2P 24979-73-5P 27029-76-1P
149614-53-9P 349619-43-8P 349619-47-2P
349619-51-8P 349619-56-3P 349619-61-0P
349619-65-4P 349619-68-7P 349619-72-3P

349619-76-7P 349619-80-3P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (alkali-sol. resin contg. styrene polymer for **neg. resist** compn. for x-ray/electron-beam lithog.)

IT 3089-11-0P 109185-69-5P 185502-11-8P 185502-14-1P 185502-15-2P
 197087-74-4P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (crosslinking agent; alkali-sol. resin contg. styrene polymer for **neg. photoresist** compn. for x-ray/electron-beam lithog.)

IT 161679-94-3P 162846-57-3P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (crosslinking agent; alkali-sol. resin contg. styrene polymer for **neg. resist** compn. for x-ray/electron-beam lithog.)

IT 110726-28-8, Trisp-Pa
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (formylation; alkali-sol. resin contg. styrene polymer for **neg. photoresist** compn. for x-ray/electron-beam lithog.)

IT 96-48-0 96-49-1, 1,3-Dioxolan-2-one 97-64-3 108-32-7 763-69-9
 1320-67-8 84540-57-8 98516-33-7
 RL: TEM (Technical or engineered material use); USES (Uses)
 (**neg. photoresist** compn. for x-ray/electron-beam lithog. contg. alkali-sol. resin and crosslinking agent and solvent mixt. contg.)

IT 484-47-9
 RL: TEM (Technical or engineered material use); USES (Uses)
 (**neg. photoresist** compn. for x-ray/electron-beam lithog. contg. alkali-sol. resin and crosslinking agent and surfactant)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Fuji Photo Film Co Ltd; DE 4435791 A 1995 HCPLUS
- (2) Fuji Photo Film Co Ltd; EP 1117002 A 2001 HCPLUS
- (3) Japan Synthetic Rubber Co Ltd; EP 0634696 A 1995 HCPLUS
- (4) Yoshimoto, H; US 5340697 A 1994 HCPLUS

IT 66003-78-9P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (acid-generating agent; alkali-sol. resin contg. styrene polymer for **neg. photoresist** compn. for x-ray/electron-beam lithog.)

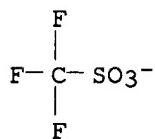
RN 66003-78-9 HCPLUS

CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
 (CA INDEX NAME)

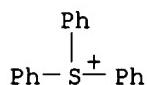
CM 1

CRN 37181-39-8

CMF C F3 O3 S



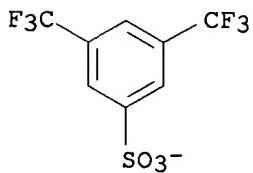
CM 2

CRN 18393-55-0
CMF C18 H15 S

IT 270563-92-3 270563-93-4 270563-96-7
 279244-39-2 349619-92-7 349647-26-3
 389859-77-2 398457-16-4 406914-01-0
 RL: TEM (Technical or engineered material use); USES (Uses)
 (acid-generating agent; alkali-sol. resin contg. styrene polymer for
 neg. photoresist compn. for x-ray/electron-beam
 lithog.)

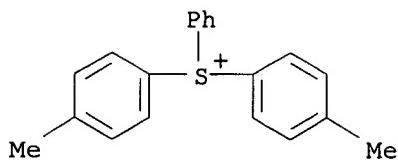
RN 270563-92-3 HCPLUS
 CN Sulfonium, bis(4-methylphenyl)phenyl-, salt with 3,5-
 bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 213740-84-2
CMF C8 H3 F6 O3 S

CM 2

CRN 70082-58-5
CMF C20 H19 S



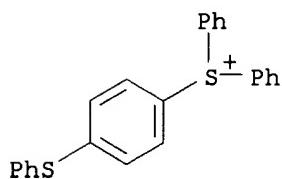
RN 270563-93-4 HCPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47480-44-4

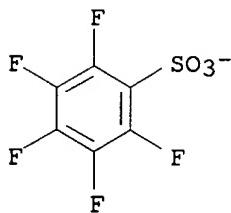
CMF C24 H19 S2



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



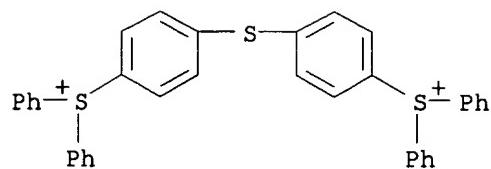
RN 270563-96-7 HCPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2

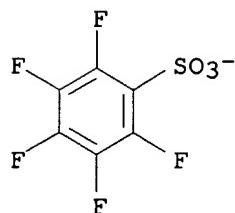
CMF C36 H28 S3



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



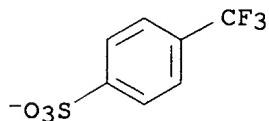
RN 279244-39-2 HCPLUS

CN Sulfonium, (4-butoxyphenyl)diphenyl-, salt with 4-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 120998-63-2

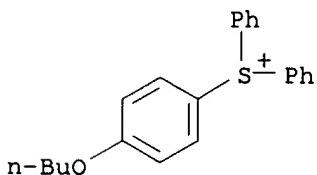
CMF C7 H4 F3 O3 S



CM 2

CRN 112406-00-5

CMF C22 H23 O S

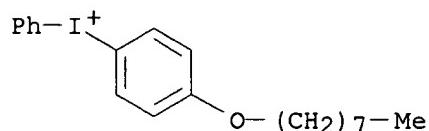


RN 349619-92-7 HCPLUS

CN Iodonium, [4-(octyloxy)phenyl]phenyl-, salt with 4-fluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

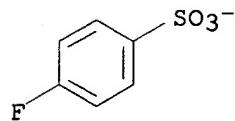
CM 1

CRN 121239-74-5
CMF C20 H26 I O



CM 2

CRN 61657-38-3
CMF C6 H4 F O3 S

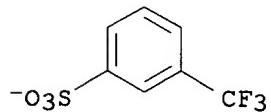


RN 349647-26-3 HCPLUS

CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with 3-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

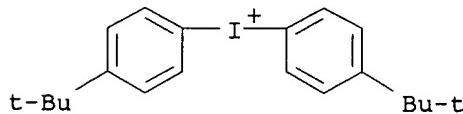
CM 1

CRN 104994-84-5
CMF C7 H4 F3 O3 S



CM 2

CRN 61267-44-5
CMF C20 H26 I



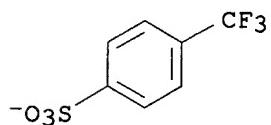
RN 389859-77-2 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
4-(trifluoromethyl)benzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 120998-63-2

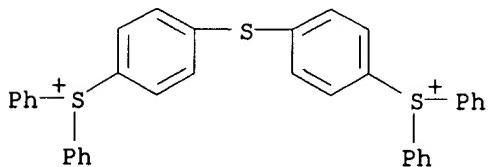
CMF C7 H4 F3 O3 S



CM 2

CRN 74227-34-2

CMF C36 H28 S3



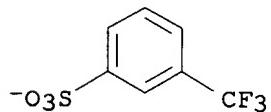
RN 398457-16-4 HCAPLUS

CN Sulfonium, triphenyl-, salt with 3-(trifluoromethyl)benzenesulfonic acid
(1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 104994-84-5

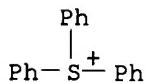
CMF C7 H4 F3 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



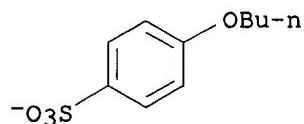
RN 406914-01-0 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
4-butoxybenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 406914-00-9

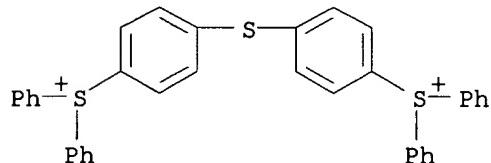
CMF C10 H13 O4 S



CM 2

CRN 74227-34-2

CMF C36 H28 S3



IT 153698-46-5P 258341-98-9P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acid-generating agent; alkali-sol. resin contg. styrene polymer for neg. resist compn. for x-ray/electron-beam lithog.)

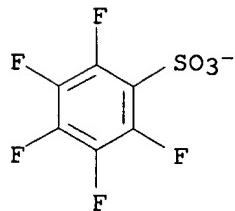
RN 153698-46-5 HCAPLUS

CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

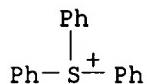
CM 1

CRN 46377-88-2

CMF C6 F5 O3 S

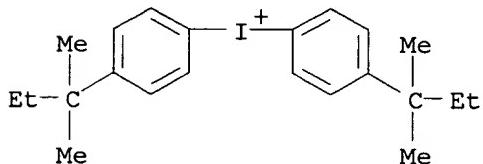


CM 2

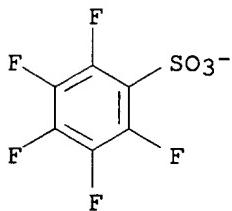
CRN 18393-55-0
CMF C18 H15 S

RN 258341-98-9 HCPLUS
 CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

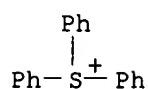
CM 1

CRN 249300-51-4
CMF C22 H30 I

CM 2

CRN 46377-88-2
CMF C6 F5 O3 S

IT 3744-08-9P, Triphenylsulfonium iodide 258342-09-5P
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
 RACT (Reactant or reagent)
 (alkali-sol. resin contg. styrene polymer for neg.
 photoresist compn. for x-ray/electron-beam lithog.)
 RN 3744-08-9 HCPLUS
 CN Sulfonium, triphenyl-, iodide (8CI, 9CI) (CA INDEX NAME)

 I^-

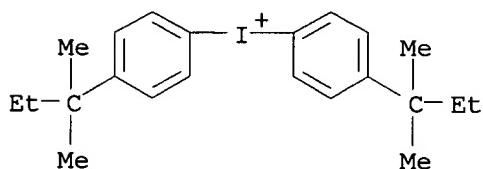
RN 258342-09-5 HCAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (2:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

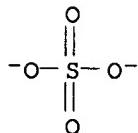
CMF C22 H30 I



CM 2

CRN 14808-79-8

CMF O4 S

IT 24979-69-9P 24979-73-5P 149614-53-9P
349619-43-8P 349619-47-2P 349619-51-8P
349619-56-3P 349619-61-0P 349619-65-4P
349619-68-7P 349619-72-3P 349619-76-7P
349619-80-3PRL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(alkali-sol. resin contg. styrene polymer for **neg.**
resist compn. for x-ray/electron-beam lithog.)

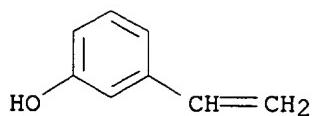
RN 24979-69-9 HCAPLUS

CN Phenol, 3-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 620-18-8

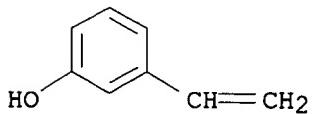
CMF C8 H8 O



RN 24979-73-5 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 620-18-8
 CMF C₈ H₈ O



CM 2

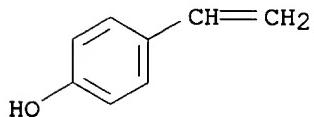
CRN 100-42-5
 CMF C₈ H₈

H₂C=CH-Ph

RN 149614-53-9 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

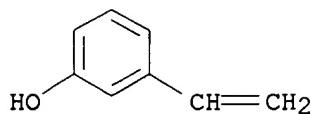
CM 1

CRN 2628-17-3
 CMF C₈ H₈ O



CM 2

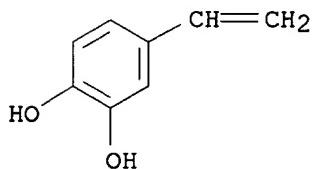
CRN 620-18-8
 CMF C₈ H₈ O



RN 349619-43-8 HCAPLUS
 CN 1,2-Benzenediol, 4-ethenyl-, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

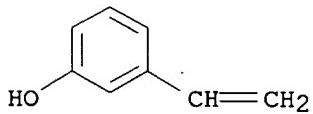
CM 1

CRN 6053-02-7
 CMF C8 H8 O2



CM 2

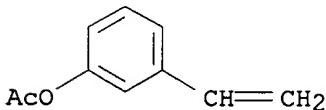
CRN 620-18-8
 CMF C8 H8 O



RN 349619-47-2 HCAPLUS
 CN Phenol, 3-ethenyl-, polymer with 3-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

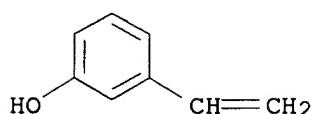
CRN 2454-30-0
 CMF C10 H10 O2



CM 2

CRN 620-18-8

CMF C8 H8 O



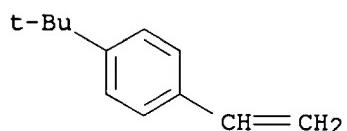
RN 349619-51-8 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 1-(1,1-dimethylethyl)-4-ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 1746-23-2

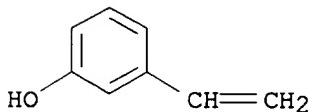
CMF C12 H16



CM 2

CRN 620-18-8

CMF C8 H8 O



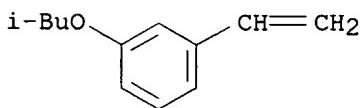
RN 349619-56-3 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 1-ethenyl-3-(2-methylpropoxy)benzene
(9CI) (CA INDEX NAME)

CM 1

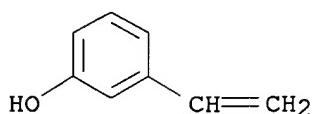
CRN 349619-55-2

CMF C12 H16 O



CM 2

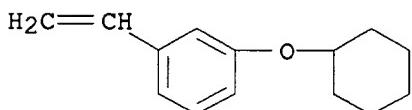
CRN 620-18-8
 CMF C8 H8 O



RN 349619-61-0 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with 1-(cyclohexyloxy)-3-ethenylbenzene (9CI)
 (CA INDEX NAME)

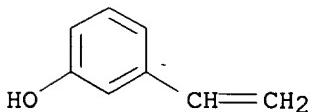
CM 1

CRN 349619-60-9
 CMF C14 H18 O



CM 2

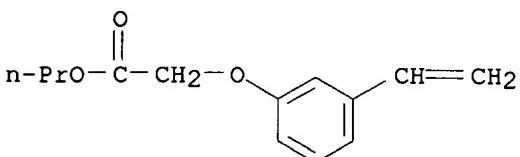
CRN 620-18-8
 CMF C8 H8 O



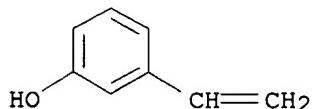
RN 349619-65-4 HCPLUS
 CN Acetic acid, (3-ethenylphenoxy)-, propyl ester, polymer with
 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

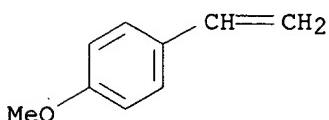
CRN 349619-64-3
 CMF C13 H16 O3



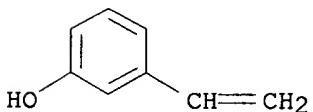
CM 2

CRN 620-18-8
CMF C8 H8 ORN 349619-68-7 HCAPLUS
CN Phenol, 3-ethenyl-, polymer with 1-ethenyl-4-methoxybenzene (9CI) (CA INDEX NAME)

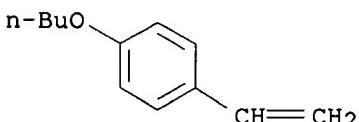
CM 1

CRN 637-69-4
CMF C9 H10 O

CM 2

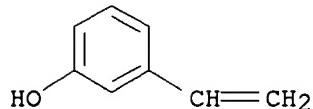
CRN 620-18-8
CMF C8 H8 ORN 349619-72-3 HCAPLUS
CN Phenol, 3-ethenyl-, polymer with 1-butoxy-4-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 105337-03-9
CMF C12 H16 O

CM 2

CRN 620-18-8
 CMF C8 H8 O

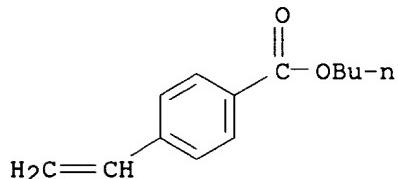


RN 349619-76-7 HCPLUS

CN Benzoic acid, 4-ethenyl-, butyl ester, polymer with 3-ethenylphenol (9CI)
 (CA INDEX NAME)

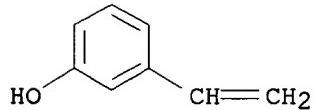
CM 1

CRN 2715-41-5
 CMF C13 H16 O2



CM 2

CRN 620-18-8
 CMF C8 H8 O

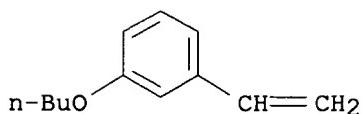


RN 349619-80-3 HCPLUS

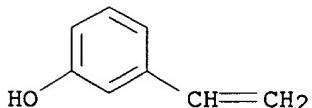
CN Phenol, 3-ethenyl-, polymer with 1-butoxy-3-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 156660-60-5
 CMF C12 H16 O



CM 2

CRN 620-18-8
CMF C₈ H₈ O

L33 ANSWER 14 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2002:119600 HCPLUS
 DN 136:191683
 TI Negatively working electron-beam or x-ray resist composition
 IN Aogo, Toshiaki
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 35 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-038
 ICS C08F002-44; C08F291-00; G03F007-004; G03F007-027; G03F007-029;
 G03F007-033; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 76
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2002049150	A2	20020215	JP 2000-235915	20000803
PRAI JP 2000-235915		20000803		

AB The compn. contains (A) acid and/or radical generators by irradn. of electron beam or x-ray, (B) water-insol. and alk.-sol. polymers, (C) crosslinking agents, (D) compds. having .gtoreq.1 acid- and/or radically polymerizable unsatd. linkage in a mol., and (E) F-contg. and/or silicone surfactants. The compn. shows high sensitivity and gives high-resoln. resist images with good developability to be useful for fine patterning in manuf. of semiconductor devices.
 ST neg electron beam x ray resist surfactant; semiconductor device fine patterning electron beam resist; fluorine silicone surfactant resist electron beam x ray
 IT Surfactants
 (F- or silicone-contg.; neg. working electron-beam or x-ray resist compn.)
 IT Polysiloxanes, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (KP 341, surfactant; neg. working electron-beam or x-ray resist compn.)

- IT X-ray resists
(neg. working electron-beam or x-ray resist compn.)
- IT Electron beam resists
(neg.-working; neg. working electron-beam or x-ray resist compn.)
- IT 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate
RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(acid generator from; neg. working electron-beam or x-ray resist compn.)
- IT 3744-08-9P, Triphenylsulfonium iodide 258342-09-5P
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(acid generator from; neg. working electron-beam or x-ray resist compn.)
- IT 71-43-2, Benzene, reactions 75-59-2, Tetramethylammonium hydroxide
832-53-1, Pentafluorobenzenesulfonyl chloride 945-51-7, Diphenyl sulfoxide 2049-95-8, tert-Amylbenzene 7664-93-9, Sulfuric acid, reactions 7758-05-6, Potassium iodate 12027-06-4, Ammonium iodide
RL: RCT (Reactant); RACT (Reactant or reagent)
(acid generator from; neg. working electron-beam or x-ray resist compn.)
- IT 270563-93-4 270563-96-7 279244-39-2
279244-43-8 349647-26-3
RL: CAT (Catalyst use); USES (Uses)
(acid generator; neg. working electron-beam or x-ray resist compn.)
- IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
258341-98-9P
RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(acid generator; neg. working electron-beam or x-ray resist compn.)
- IT 162846-57-3P
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(crosslinking agent from; neg. working electron-beam or x-ray resist compn.)
- IT 50-00-0, Formaldehyde, reactions 110726-28-8, Trisp PA
RL: RCT (Reactant); RACT (Reactant or reagent)
(crosslinking agent from; neg. working electron-beam or x-ray resist compn.)
- IT 161679-94-3P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(crosslinking agent; neg. working electron-beam or x-ray resist compn.)
- IT 3089-11-0 32449-09-5 185502-14-1 185502-15-2 197087-74-4
RL: TEM (Technical or engineered material use); USES (Uses)
(crosslinking agent; neg. working electron-beam or x-ray resist compn.)
- IT 171429-59-7P 173786-80-6DP, hydrolyzed 349647-07-0P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(neg. working electron-beam or x-ray resist compn.)
- IT 15625-89-5, Trimethylolpropane triacrylate 17831-71-9, Tetraethylene glycol diacrylate 24979-73-5 29570-58-9, Dipentaerythritol hexaacrylate 110123-10-9 185405-14-5 349647-01-4
349647-03-6 349647-04-7 349647-05-8 349647-06-9
399034-03-8
RL: TEM (Technical or engineered material use); USES (Uses)
(neg. working electron-beam or x-ray resist compn.)

IT 66003-78-9

RL: CAT (Catalyst use); USES (Uses)
(photoacid generator; neg. working electron-beam or x-ray resist
comprn.)

IT 137462-24-9, Megafac F 176 216679-67-3, Megafac R 08

RL: TEM (Technical or engineered material use); USES (Uses) (surfactant; neg. working electron-beam or x-ray resist)

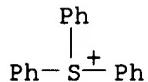
IT 3744-08-9P, Triphenylsulfonium iodide 258342-09-5P

RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
RACT (Reactant or reagent)

(acid generator from; neg. working electron-beam or x-ray resist compn.)

RN 3744-08-9 HCAPLUS

CN Sulfonium, triphenyl-, iodide (8CI, 9CI) (CA INDEX NAME)



I -

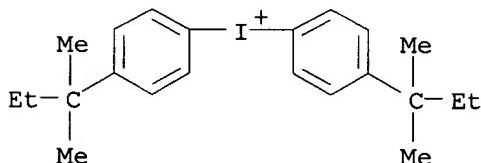
RN 258342-09-5 HCAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (2:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

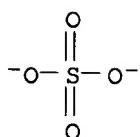
CMF C22 H30 I



GM 2

CRN 14808-79-8

CMF 04 S



IT 270563-93-4 270563-96-7 279244-39-2

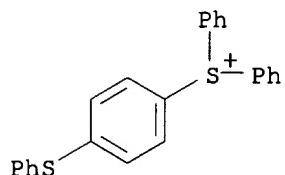
279244-43-8 349647-26-3

RL: CAT (Catalyst use); USES (Uses)
 (acid generator; neg. working electron-beam or x-ray resist compn.)

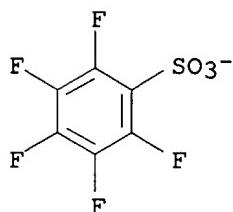
RN 270563-93-4 HCAPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with
 pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47480-44-4
 CMF C24 H19 S2

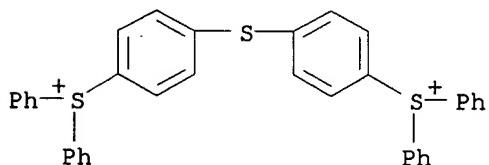
CM 2

CRN 46377-88-2
 CMF C6 F5 O3 S

RN 270563-96-7 HCAPLUS

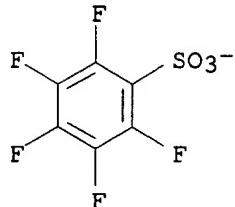
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
 pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2
 CMF C36 H28 S3

CM 2

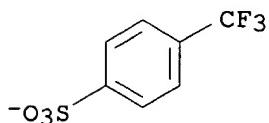
CRN 46377-88-2
 CMF C6 F5 O3 S



RN 279244-39-2 HCAPLUS
 CN Sulfonium, (4-butoxyphenyl)diphenyl-, salt with 4-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

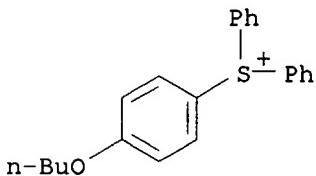
CM 1

CRN 120998-63-2
 CMF C7 H4 F3 O3 S



CM 2

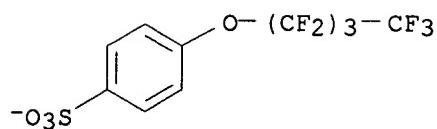
CRN 112406-00-5
 CMF C22 H23 O S



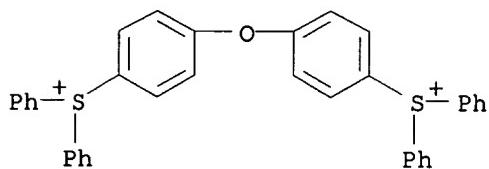
RN 279244-43-8 HCAPLUS
 CN Sulfonium, (oxydi-4,1-phenylene)bis[diphenyl-, salt with 4-(nonafluorobutoxy)benzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 279244-42-7
 CMF C10 H4 F9 O4 S



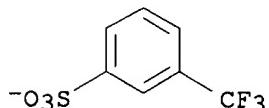
CM 2

CRN 279244-41-6
CMF C36 H28 O S2

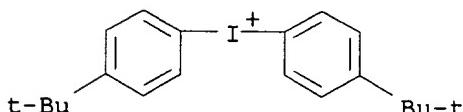
RN 349647-26-3 HCPLUS

CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with
3-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 104994-84-5
CMF C7 H4 F3 O3 S

CM 2

CRN 61267-44-5
CMF C20 H26 IIT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
258341-98-9PRL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP
(Preparation); USES (Uses)

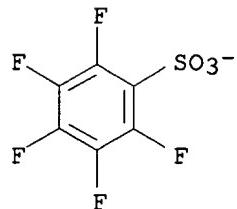
(acid generator; neg. working electron-beam or x-ray resist compn.)

RN 153698-46-5 HCPLUS

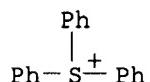
CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)

(9CI) (CA INDEX NAME)

CM 1

CRN 46377-88-2
CMF C6 F5 O3 S

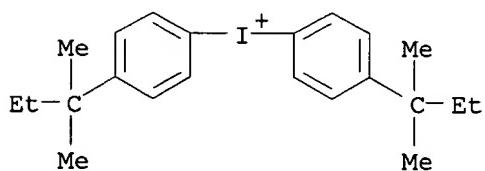
CM 2

CRN 18393-55-0
CMF C18 H15 S

RN 258341-98-9 HCPLUS

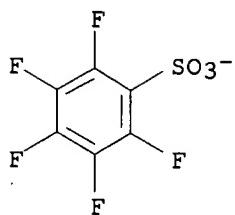
CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4
CMF C22 H30 I

CM 2

CRN 46377-88-2
CMF C6 F5 O3 S



IT 24979-73-5 349647-01-4 349647-03-6

349647-04-7 399034-03-8

RL: TEM (Technical or engineered material use); USES (Uses)
(neg. working electron-beam or x-ray resist compn.)

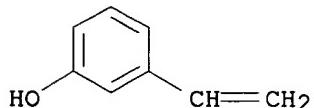
RN 24979-73-5 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 620-18-8

CMF C8 H8 O



CM 2

CRN 100-42-5

CMF C8 H8

 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$

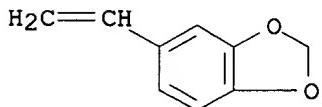
RN 349647-01-4 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI) (CA INDEX NAME)

CM 1

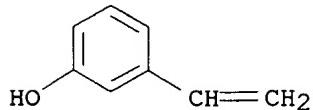
CRN 7315-32-4

CMF C9 H8 O2



CM 2

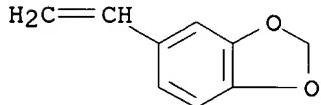
CRN 620-18-8
 CMF C8 H8 O



RN 349647-03-6 HCAPLUS
 CN Phenol, 3-ethenyl-, polymer with ethenylbenzene and 5-ethenyl-1,3-benzodioxole (9CI) (CA INDEX NAME)

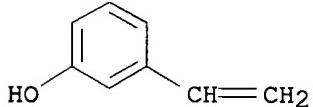
CM 1

CRN 7315-32-4
 CMF C9 H8 O2



CM 2

CRN 620-18-8
 CMF C8 H8 O



CM 3

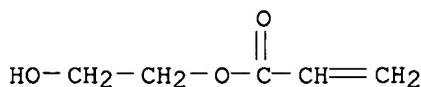
CRN 100-42-5
 CMF C8 H8

H₂C=CH-Ph

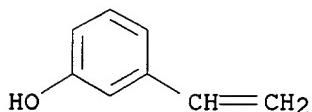
RN 349647-04-7 HCAPLUS
 CN 2-Propenoic acid, 2-hydroxyethyl ester, polymer with ethenylbenzene and 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

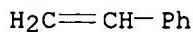
CRN 818-61-1
 CMF C5 H8 O3



CM 2

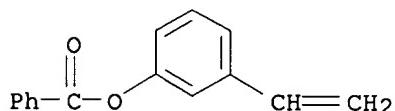
CRN 620-18-8
CMF C8 H8 O

CM 3

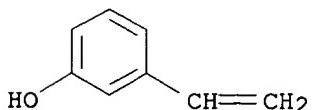
CRN 100-42-5
CMF C8 H8

RN 399034-03-8 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with 3-ethenylphenyl benzoate (9CI) (CA INDEX NAME)

CM 1

CRN 81913-58-8
CMF C15 H12 O2

CM 2

CRN 620-18-8
CMF C8 H8 O

IT 66003-78-9

RL: CAT (Catalyst use); USES (Uses)
 (photoacid generator; neg. working electron-beam or x-ray resist
 compn.)

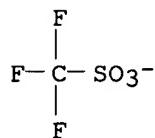
RN 66003-78-9 HCPLUS

CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
 (CA INDEX NAME)

CM 1

CRN 37181-39-8

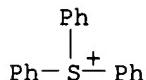
CMF C F3 O3 S



CM 2

CRN 18393-55-0

CMF C18 H15 S



L33 ANSWER 15 OF 25 HCPLUS COPYRIGHT 2003 ACS

AN 2002:119599 HCPLUS

DN 136:191682

TI Negatively working electron-beam or x-ray resist composition

IN Aogo, Toshiaki

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokyo Koho, 36 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-038

ICS C08K005-00; C08L101-12; G03F007-004; G03F007-027; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

Section cross-reference(s): 76

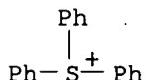
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002049149	A2	20020215	JP 2000-233120	20000801
PRAI	JP 2000-233120		20000801		

AB The compn. contains (A) acid and/or radical generators by irradn. of
 electron beam or x-ray, (B) water-insol. and alk.-sol. polymers, (C)
 crosslinking agents, (D) compds. having .gtoreq.1 acid- and/or radically

polymerizable unsatd. linkage in a mol., and (E) 40-90 wt.% .gtoreq.1
 solvents selected from propylene glycol Me ether acetate, propylene glycol
 Me ether propionate, Me 3-methoxypropionate, Et 3-methoxypropionate, Me
 3-ethoxypropionate, and Et 3-ethoxypropionate and 10-60 wt.% .gtoreq.1
 solvents selected from propylene glycol Me ether, propylene glycol Et
 ether, Me lactate, Et lactate, and diacetonealc. The compn. shows high
 sensitivity and gives high-resoln. resist images with good developability
 to be useful for fine patterning in manuf. of semiconductor devices.
ST neg electron beam x ray resist solvent; semiconductor device fine
 patterning electron beam resist
IT X-ray resists
 (neg. working electron-beam or x-ray resist compn.)
IT Electron beam resists
 (neg.-working; neg. working electron-beam or x-ray
 resist compn.)
IT 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate
 RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP
 (Preparation); USES (Uses)
 (acid generator from; neg. working electron-beam or x-ray resist
 compn.)
IT 3744-08-9P, Triphenylsulfonium iodide **258342-09-5P**
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
 RACT (Reactant or reagent)
 (acid generator from; neg. working electron-beam or x-ray resist
 compn.)
IT 71-43-2, Benzene, reactions 75-59-2, Tetramethylammonium hydroxide
 832-53-1, Pentafluorobenzenesulfonyl chloride 945-51-7, Diphenyl
 sulfoxide 2049-95-8, tert-Amylbenzene 7664-93-9, Sulfuric acid,
 reactions 7758-05-6, Potassium iodate 12027-06-4, Ammonium iodide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (acid generator from; neg. working electron-beam or x-ray resist
 compn.)
IT 270563-93-4 270563-96-7 279244-39-2
279244-43-8 349647-26-3
 RL: CAT (Catalyst use); USES (Uses)
 (acid generator; neg. working electron-beam or x-ray resist compn.)
IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
258341-98-9P
 RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP
 (Preparation); USES (Uses)
 (acid generator; neg. working electron-beam or x-ray resist compn.)
IT 162846-57-3P
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
 RACT (Reactant or reagent)
 (crosslinking agent from; neg. working electron-beam or x-ray resist
 compn.)
IT 50-00-0, Formaldehyde, reactions 110726-28-8, Trisp PA
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (crosslinking agent from; neg. working electron-beam or x-ray resist
 compn.)
IT 161679-94-3P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (crosslinking agent; neg. working electron-beam or x-ray resist compn.)
IT 3089-11-0 32449-09-5 185502-14-1 185502-15-2 197087-74-4
 RL: TEM (Technical or engineered material use); USES (Uses)
 (crosslinking agent; neg. working electron-beam or x-ray resist compn.)
IT 130501-59-6P 173786-80-6DP, hydrolyzed 349647-07-0P

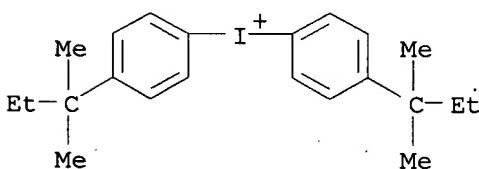
IT RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(neg. working electron-beam or x-ray resist compn.)
15625-89-5, Trimethylolpropane triacrylate 17831-71-9, Tetraethylene glycol diacrylate **24979-73-5** 29570-58-9, Dipentaerythritol hexaacrylate 110123-10-9 185405-14-5 **349647-01-4**
349647-03-6 **349647-04-7** 349647-05-8 349647-06-9
399034-03-8
RL: TEM (Technical or engineered material use); USES (Uses)
(neg. working electron-beam or x-ray resist compn.)
66003-78-9
RL: CAT (Catalyst use); USES (Uses)
(photoacid generator; neg. working electron-beam or x-ray resist compn.)
IT 97-64-3, Ethyl lactate 123-42-2, Diacetonealcohol 763-69-9, Ethyl 3-ethoxypropionate 1320-67-8, Propylene glycol monomethyl ether 3852-09-3, Methyl 3-methoxypropionate 84540-57-8, Propylene glycol monomethyl ether acetate
RL: TEM (Technical or engineered material use); USES (Uses)
(solvent; neg. working electron-beam or x-ray resist compn.)
IT **3744-08-9P**, Triphenylsulfonium iodide **258342-09-5P**
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(acid generator from; neg. working electron-beam or x-ray resist compn.)
RN 3744-08-9 HCAPLUS
CN Sulfonium, triphenyl-, iodide (8CI, 9CI) (CA INDEX NAME)



RN 258342-09-5 HCAPLUS
CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (2:1) (9CI) (CA INDEX NAME)

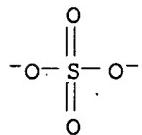
CM 1

CRN 249300-51-4
CMF C22 H30 I



CM 2

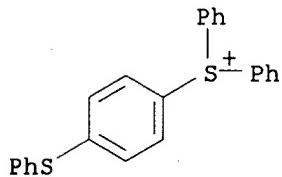
CRN 14808-79-8
CMF O4 S



IT 270563-93-4 270563-96-7 279244-39-2
279244-43-8 349647-26-3
RL: CAT (Catalyst use); USES (Uses)
(acid generator; neg. working electron-beam or x-ray resist compn.)
RN 270563-93-4 HCPLUS
CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

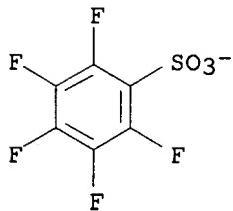
CM 1

CRN 47480-44-4
CMF C24 H19 S2



CM 2

CRN 46377-88-2
CMF C6 F5 O3 S

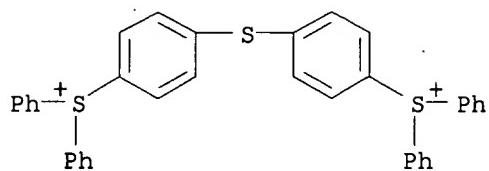


RN 270563-96-7 HCPLUS
CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

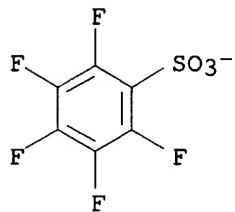
CM 1

CRN 74227-34-2

CMF C36 H28 S3



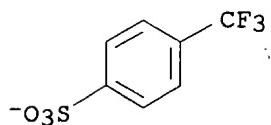
CM 2

CRN 46377-88-2
CMF C6 F5 O3 S

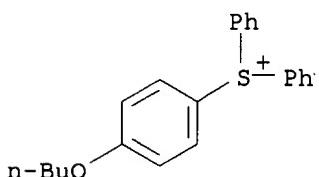
RN 279244-39-2 HCPLUS

CN Sulfonium, (4-butoxyphenyl)diphenyl-, salt with 4-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 120998-63-2
CMF C7 H4 F3 O3 S

CM 2

CRN 112406-00-5
CMF C22 H23 O S

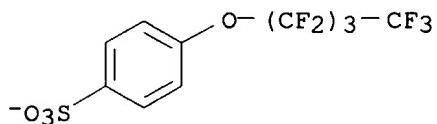
RN 279244-43-8 HCAPLUS

CN Sulfonium, (oxydi-4,1-phenylene)bis[diphenyl-, salt with
4-(nonafluorobutoxy)benzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 279244-42-7

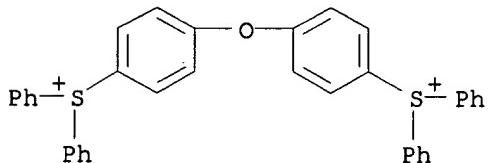
CMF C10 H4 F9 O4 S



CM 2

CRN 279244-41-6

CMF C36 H28 O S2



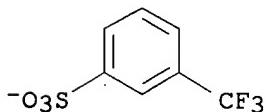
RN 349647-26-3 HCAPLUS

CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with
3-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 104994-84-5

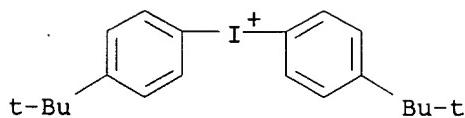
CMF C7 H4 F3 O3 S



CM 2

CRN 61267-44-5

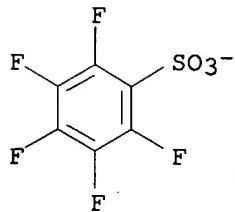
CMF C20 H26 I



IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
258341-98-9P
RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP
(Preparation); USES (Uses)
(acid generator; neg. working electron-beam or x-ray resist compn.)
RN 153698-46-5 HCAPLUS
CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
(9CI) (CA INDEX NAME)

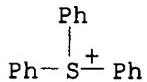
CM 1

CRN 46377-88-2
CMF C6 F5 O3 S



CM 2

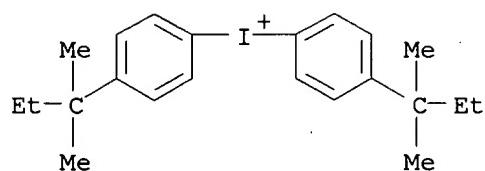
CRN 18393-55-0
CMF C18 H15 S



RN 258341-98-9 HCAPLUS
CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

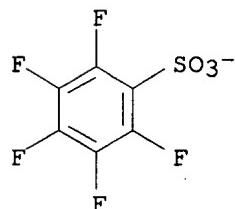
CRN 249300-51-4
CMF C22 H30 I



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



IT 24979-73-5 349647-01-4 349647-03-6

349647-04-7 399034-03-8

RL: TEM (Technical or engineered material use); USES (Uses)
(neg. working electron-beam or x-ray resist compn.)

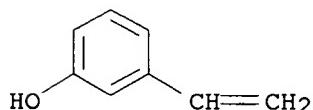
RN 24979-73-5 HCPLUS

CN Phenol, 3-ethenyl-, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 620-18-8

CMF C8 H8 O



CM 2

CRN 100-42-5

CMF C8 H8

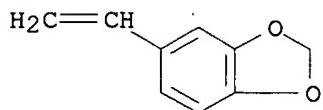
 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$

RN 349647-01-4 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI) (CA INDEX NAME)

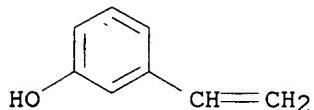
CM 1

CRN 7315-32-4
CMF C9 H8 O2



CM 2

CRN 620-18-8
CMF C8 H8 O

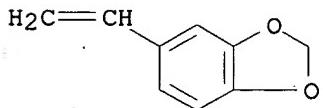


RN 349647-03-6 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with ethenylbenzene and 5-ethenyl-1,3-benzodioxole (9CI) (CA INDEX NAME)

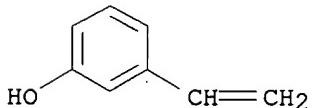
CM 1

CRN 7315-32-4
CMF C9 H8 O2



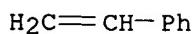
CM 2

CRN 620-18-8
CMF C8 H8 O



CM 3

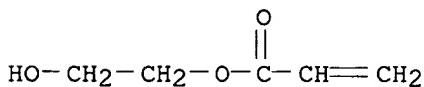
CRN 100-42-5
 CMF C8 H8



RN 349647-04-7 HCPLUS
 CN 2-Propenoic acid, 2-hydroxyethyl ester, polymer with ethenylbenzene and
 3-ethenylphenol (9CI) (CA INDEX NAME)

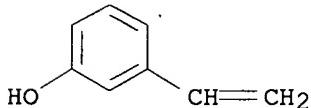
CM 1

CRN 818-61-1
 CMF C5 H8 O3



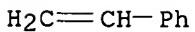
CM 2

CRN 620-18-8
 CMF C8 H8 O



CM 3

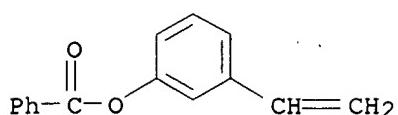
CRN 100-42-5
 CMF C8 H8



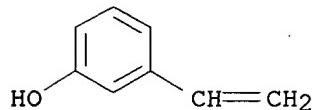
RN 399034-03-8 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with 3-ethenylphenyl benzoate (9CI) (CA INDEX NAME)

CM 1

CRN 81913-58-8
 CMF C15 H12 O2



CM 2

CRN 620-18-8
CMF C₈ H₈ O

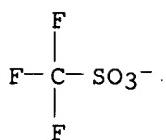
IT 66003-78-9

RL: CAT (Catalyst use); USES (Uses)
(photoacid generator; neg. working electron-beam or x-ray resist
comprn.)

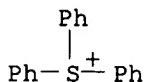
RN 66003-78-9 HCPLUS

CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
(CA INDEX NAME)

CM 1

CRN 37181-39-8
CMF C F₃ O₃ S

CM 2

CRN 18393-55-0
CMF C₁₈ H₁₅ S

L33 ANSWER 16 OF 25 HCPLUS COPYRIGHT 2003 ACS

AN 2002:47839 HCPLUS

DN 136:126534

TI Electron beam- or x-ray **negative**-working **resist**

compositions for fine processing of semiconductor devices
 IN Aogo, Toshiaki
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 48 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-038
 ICS C08F290-12; C08K005-00; C08K005-13; C08L025-18; G03F007-004;
 G03F007-027; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002014470	A2	20020118	JP 2000-194756	20000628
PRAI	JP 2000-194756		20000628		

AB The compns. comprise (A) acid- and/or radical species-generating compds. by radiation of electron beam or x ray, (B) water-insol. and alkali aq. soln.-sol. polymers having .gtoreq.1 unsatd. bonds polymerizable by acids and/or radicals, (C) agents crosslinking with B by acids, and (D) solvents contg. (a) 40-90% of .gtoreq.1 solvents selected from propylene glycol monomethyl ether acetate, propylene glycol monomethyl ether propionate, Me 3-methoxypropionate, Et 3-methoxypropionate, Me 3-ethoxypropionate, and Et 3-ethoxypropionate and (b) 10-60% of .gtoreq.1 solvents selected from propylene glycol monomethyl ether, propylene glycol monoethyl ether, Me lactate, Et lactate, and diacetone alc.. The compns. show high sensitivity and resoln., good coatability, and decreased development defects and give rectangular profiles.

ST electron beam **neg resist** solvent blend semiconductor manuf; x ray **neg resist** solvent blend semiconductor manuf

IT Semiconductor device fabrication
 Solvents

(electron-beam or x-ray **neg. photoresists** contg.
 solvent mixts. for fine processing of semiconductors)

IT Electron beam **resists**
X-ray resists
 (**neg.-working**; electron-beam or x-ray **neg.**
photoresists contg. solvent mixts. for fine processing of
 semiconductors)

IT 66003-78-9 270563-93-4 270563-96-7
 279244-39-2 279244-43-8 349647-26-3
 RL: CAT (Catalyst use); USES (Uses)

(acid generators; electron-beam or x-ray **neg.**
photoresists contg. solvent mixts. for fine processing of
 semiconductors)

IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
 258341-98-9P 270564-02-8P, Tetramethylammonium
 pentafluorobenzenesulfonate
 RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP
 (Preparation); USES (Uses)

(acid generators; electron-beam or x-ray **neg.**
photoresists contg. solvent mixts. for fine processing of
 semiconductors)

IT 185502-14-1P
 RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP

(Preparation); USES (Uses)
 (crosslinking agents; electron-beam or x-ray neg.
photoresists contg. solvent mixts. for fine processing of
 semiconductors)

IT 161679-94-3P 162846-57-3P 185502-15-2P 197087-74-4P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (crosslinking agents; electron-beam or x-ray neg.
photoresists contg. solvent mixts. for fine processing of
 semiconductors)

IT 3089-11-0 32449-09-5
 RL: TEM (Technical or engineered material use); USES (Uses)
 (crosslinking agents; electron-beam or x-ray neg.
photoresists contg. solvent mixts. for fine processing of
 semiconductors)

IT 30030-25-2DP, reaction products with polyhydroxystyrene 54175-13-2P, VP
 15000 ester with methacrylic acid anhydride; 389795-43-1P, VP 8000 ester
 with 2-isocyanatoethyl methacrylate 389795-44-2P, VP 8000 ester with
 4-styrenesulfonyl chloride
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (electron-beam or x-ray neg. **photoresists** contg.
 solvent mixts. for fine processing of semiconductors)

IT 15625-89-5, Trimethylolpropane triacrylate 17831-71-9, Tetraethylene
 glycol diacrylate 29570-58-9, Dipentaerythritol hexaacrylate
349647-14-9 349647-18-3 349647-19-4 349647-21-8
349647-23-0 349652-47-7 389634-37-1 389799-70-6
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electron-beam or x-ray neg. **photoresists** contg.
 solvent mixts. for fine processing of semiconductors)

IT **279218-84-7P**
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
 RACT (Reactant or reagent)
 (intermediates in prepn. of acid generators; electron-beam or x-ray
 neg. **photoresists** contg. solvent mixts. for fine
 processing of semiconductors)

IT 75-59-2, Tetramethylammonium hydroxide 832-53-1,
 Pentafluorobenzenesulfonyl chloride 945-51-7, Diphenyl sulfoxide
 2049-95-8, tert-Amylbenzene **3744-08-9**, Triphenylsulfonium iodide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactants in prepn. of acid generators; electron-beam or x-ray
 neg. **photoresists** contg. solvent mixts. for fine
 processing of semiconductors)

IT 110726-28-8, Trisp PA 161679-95-4 161679-98-7 185502-11-8
 197087-73-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactants in prepn. of crosslinking agents; electron-beam or x-ray
 neg. **photoresists** contg. solvent mixts. for fine
 processing of semiconductors)

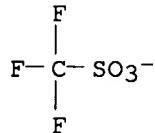
IT 97-64-3, Ethyl lactate 123-42-2, Diacetone alcohol 547-64-8, Methyl
 lactate 763-69-9, Ethyl 3-ethoxypropionate 1320-67-8, Propylene glycol
 monomethyl ether 3852-09-3, Methyl 3-methoxypropionate 10606-42-5,
 Ethyl 3-methoxypropionate 14144-33-3, Methyl 3-ethoxypropionate
 52125-53-8, Propylene glycol monoethyl ether 84540-57-8, Propylene
 glycol monomethyl ether acetate 98516-33-7, Propylene glycol monomethyl
 ether propionate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (solvents; electron-beam or x-ray neg. **photoresists**)

contg. solvent mixts. for fine processing of semiconductors)

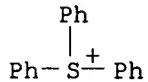
IT 66003-78-9 270563-93-4 270563-96-7
 279244-39-2 279244-43-8 349647-26-3
 RL: CAT (Catalyst use); USES (Uses)
 (acid generators; electron-beam or x-ray neg.
 photoresists contg. solvent mixts. for fine processing of
 semiconductors)

RN 66003-78-9 HCAPLUS
 CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
 (CA INDEX NAME)

CM 1

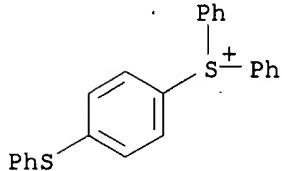
CRN 37181-39-8
CMF C F3 O3 S

CM 2

CRN 18393-55-0
CMF C18 H15 S

RN 270563-93-4 HCAPLUS
 CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with
 pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

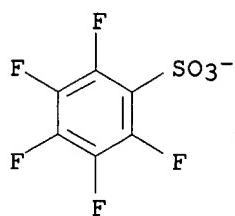
CM 1

CRN 47480-44-4
CMF C24 H19 S2

CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



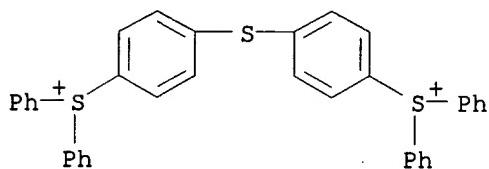
RN 270563-96-7 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2

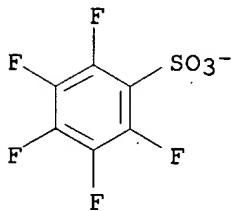
CMF C36 H28 S3



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



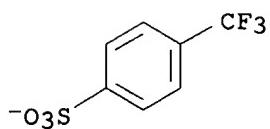
RN 279244-39-2 HCAPLUS

CN Sulfonium, (4-butoxyphenyl)diphenyl-, salt with 4-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

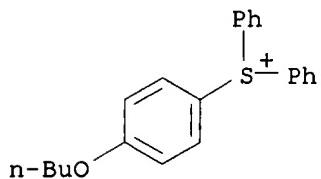
CRN 120998-63-2

CMF C7 H4 F3 O3 S



CM 2

CRN 112406-00-5
 CMF C22 H23 O S

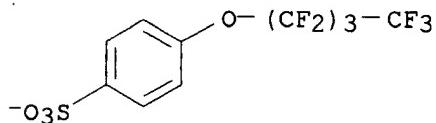


RN 279244-43-8 HCAPLUS

CN Sulfonium, (oxydi-4,1-phenylene)bis[diphenyl-, salt with
 4-(nonafluorobutoxy)benzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

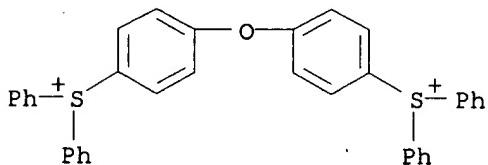
CM 1

CRN 279244-42-7
 CMF C10 H4 F9 O4 S



CM 2

CRN 279244-41-6
 CMF C36 H28 O S2

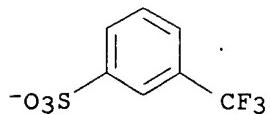


RN 349647-26-3 HCAPLUS

CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with
 3-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

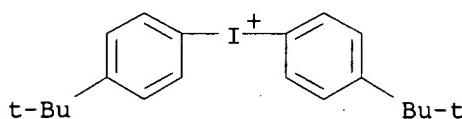
CM 1

CRN 104994-84-5
 CMF C7 H4 F3 O3 S



CM 2

CRN 61267-44-5
 CMF C₂₀ H₂₆ I



IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
 258341-98-9P

RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)

(acid generators; electron-beam or x-ray neg.

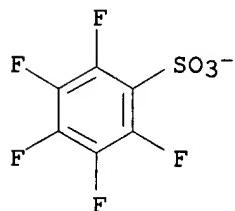
photoresists contg. solvent mixts. for fine processing of semiconductors)

RN 153698-46-5 HCAPLUS

CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
 (9CI) (CA INDEX NAME)

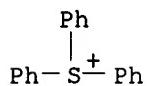
CM 1

CRN 46377-88-2
 CMF C₆ F₅ O₃ S



CM 2

CRN 18393-55-0
 CMF C₁₈ H₁₅ S



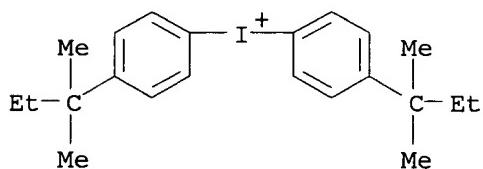
RN 258341-98-9 HCPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

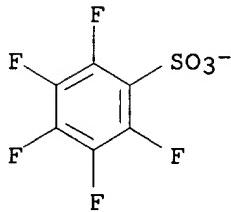
CMF C22 H30 I



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



IT 349647-14-9 349647-18-3 389634-37-1

389799-70-6

RL: TEM (Technical or engineered material use); USES (Uses)
(electron-beam or x-ray neg. photoresists contg.
solvent mixts. for fine processing of semiconductors)

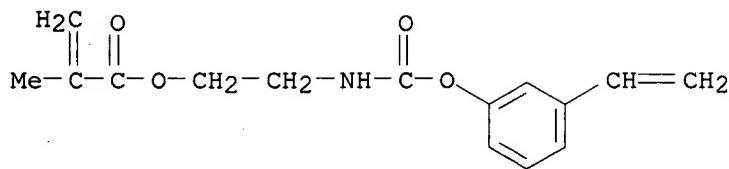
RN 349647-14-9 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[[3-ethenylphenoxy]carbonyl]amino]ethyl
ester, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 349647-13-8

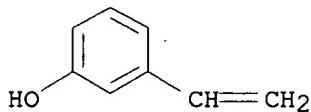
CMF C15 H17 N O4



CM 2

CRN 620-18-8

CMF C8 H8 O



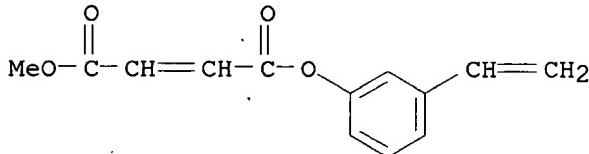
RN 349647-18-3 HCPLUS

CN 2-Butenedioic acid, 3-ethenylphenyl methyl ester, polymer with
3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 349647-17-2

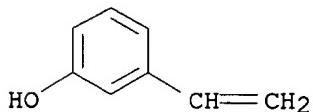
CMF C13 H12 O4



CM 2

CRN 620-18-8

CMF C8 H8 O

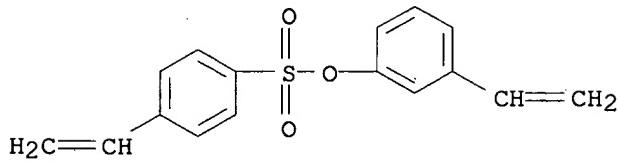


RN 389634-37-1 HCPLUS

CN Benzenesulfonic acid, 4-ethenyl-, 3-ethenylphenyl ester, compd. with
3-ethenylphenol (1:1) (9CI) (CA INDEX NAME)

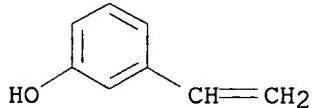
CM 1

CRN 349647-15-0
 CMF C16 H14 O3 S



CM 2

CRN 620-18-8
 CMF C8 H8 O

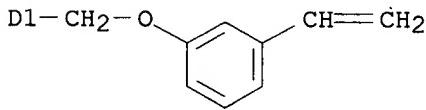


RN 389799-70-6 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 4-ethenyl-1,2-dimethoxybenzene and 1-ethenyl-3-[(ethenylphenyl)methoxy]benzene (9CI) (CA INDEX NAME)

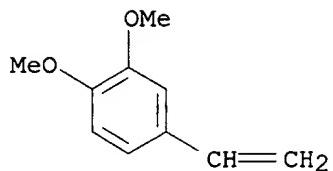
CM 1

CRN 389799-69-3
 CMF C17 H16 O
 CCI IDS

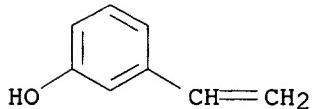
D1-CH=CH₂

CM 2

CRN 6380-23-0
 CMF C10 H12 O2



CM 3

CRN 620-18-8
CMF C8 H8 O

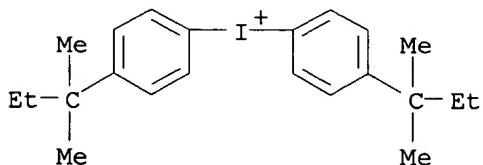
IT 279218-84-7P

RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
RACT (Reactant or reagent)
(intermediates in prepn. of acid generators; electron-beam or x-ray
neg. photoresists contg. solvent mixts. for fine
processing of semiconductors)

RN 279218-84-7 HCAPLUS

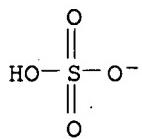
CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (1:1) (9CI) (CA
INDEX NAME)

CM 1

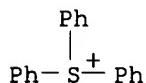
CRN 249300-51-4
CMF C22 H30 I

CM 2

CRN 14996-02-2
CMF H O4 S



IT 3744-08-9, Triphenylsulfonium iodide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactants in prepn. of acid generators; electron-beam or x-ray
neg. photoresists contg. solvent mixts. for fine
 processing of semiconductors)
 RN 3744-08-9 HCPLUS
 CN Sulfonium, triphenyl-, iodide (8CI, 9CI) (CA INDEX NAME)



I-

L33 ANSWER 17 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2002:26267 HCPLUS
 DN 136:93496
 TI Electron beam- or x-ray-sensitive chemically amplified **negative**
 -working **photoresist** composition for semiconductor device
 fabrication
 IN Aogo, Toshiaki
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokyo Koho, 47 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-038
 ICS C08F002-50; C08F012-34; C08F016-12; C08F016-36; C08F020-10;
 C08F020-54; C08F022-30; C08F028-02; C08F290-00; C08F290-12;
 C08F299-00; G03F007-004; G03F007-027; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 76
 FAN:CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002006491	A2	20020109	JP 2000-193140	20000627
PRAI	JP 2000-193140		20000627		
AB	The title compn. contains an electron beam- or x-ray sensitive acid generator, a resin, which has .gtoreq.1 unsat. groups for acid- or radical-initiated polymn. and which becomes sol. in an alkali soln., an acid-sensitive crosslinking agent, and a fluoro- or silicone surfactant. The compn. provides the good resoln., the high sensitivity, and the good pattern profile.				
ST	electron beam x ray sensitive neg working photoresist				

- comprn
- IT Ion beam resists
Semiconductor device fabrication
X-ray resists
(electron beam- or x-ray-sensitive neg.-working
photoresist compn.)
- IT 75-59-2, Tetramethylammonium hydroxide 832-53-1,
Pentafluorobenzenesulfonyl chloride 945-51-7, Diphenyl sulfoxide
2049-95-8, tert-Amylbenzene 7664-93-9, Sulfuric acid, reactions
7758-05-6, Potassium iodate 12027-06-4, Ammonium iodide
RL: RCT (Reactant); RACT (Reactant or reagent)
(acid generator in chem. amplified neg.-working
photoresist compn.).
- IT 3744-08-9, Triphenylsulfonium iodide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(acid generator in chem. amplified neg.-working
photoresist compn.)
- IT 258341-98-9 270564-02-8, Tetramethylammonium
pentafluorobenzenesulfonate 279218-84-7, Iodonium,
bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (1:1)
RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or
engineered material use); PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)
(acid generator in chem. amplified neg.-working
photoresist compn.)
- IT 153698-46-5, Triphenylsulfonium pentafluorobenzenesulfonate
RL: SPN (Synthetic preparation); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(acid generator in chem. amplified neg.-working
photoresist compn.)
- IT 270563-93-4 270563-96-7 279244-39-2
279244-43-8 349647-26-3
RL: SPN (Synthetic preparation); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(acid generator in electron beam- or x-ray-sensitive chem. amplified
neg.-working **photoresist** compn.)
- IT 50-00-0, Formaldehyde, reactions 67-56-1, Methanol, reactions
110726-28-8, Tris-PA
RL: RCT (Reactant); RACT (Reactant or reagent)
(crosslinking agent in electron beam- or x-ray-sensitive chem.
amplified neg.-working **photoresist** compn.)
- IT 162846-57-3
RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or
engineered material use); PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)
(crosslinking agent in electron beam- or x-ray-sensitive chem.
amplified neg.-working **photoresist** compn.)
- IT 3089-11-0 32449-09-5 161679-94-3 185502-15-2 197087-74-4
RL: SPN (Synthetic preparation); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(crosslinking agent in electron beam- or x-ray-sensitive chem.
amplified neg.-working **photoresist** compn.)
- IT 2633-67-2D, 4-Styrenesulfonyl chloride, reaction product with
hydroxystyrene polymer 24979-70-2D, Vp 8000, reaction product with
olefinic compd. 30030-25-2D, reaction product with hydroxystyrene
polymer 30674-80-7D, 2-Isocyanatoethyl methacrylate, reaction product
with hydroxystyrene polymer 54175-13-2

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (resin in chem. amplified **neg.-working photoresist compn.**)

IT 349647-08-1 349647-10-5 349647-12-7 **349647-14-9**
349647-16-1 349647-18-3 349647-19-4 349647-21-8
 349647-23-0 349652-45-5 349652-47-7 **349652-48-8**

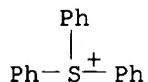
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (resin in electron beam- or x-ray-sensitive chem. amplified **neg.-working photoresist compn.**)

IT **3744-08-9**, Triphenylsulfonium iodide

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (acid generator in chem. amplified **neg.-working photoresist compn.**)

RN 3744-08-9 HCPLUS

CN Sulfonium, triphenyl-, iodide (8CI, 9CI) (CA INDEX NAME)



IT **258341-98-9 279218-84-7**, Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (1:1)
 RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (acid generator in chem. amplified **neg.-working photoresist compn.**)

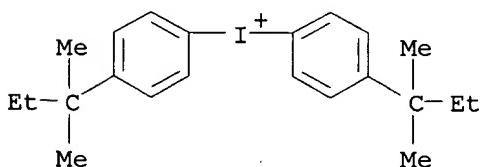
RN 258341-98-9 HCPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

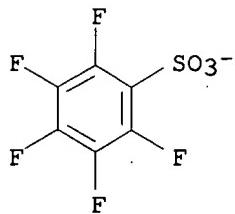
CMF C22 H30 I



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



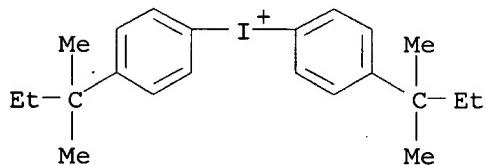
RN 279218-84-7 HCPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

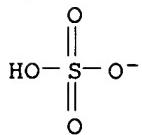
CMF C22 H30 I



CM 2

CRN 14996-02-2

CMF H O4 S



IT 153698-46-5, Triphenylsulfonium pentafluorobenzenesulfonate

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (acid generator in chem. amplified **neg.-working photoresist compn.**)

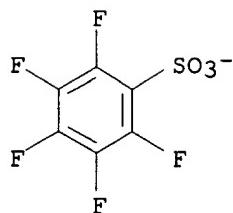
RN 153698-46-5 HCPLUS

CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

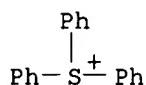
CM 1

CRN 46377-88-2

CMF C6 F5 O3 S



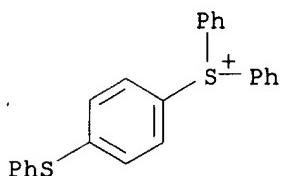
CM 2

CRN 18393-55-0
CMF C18 H15 SIT 270563-93-4 270563-96-7 279244-39-2
279244-43-8 349647-26-3RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acid generator in electron beam- or x-ray-sensitive chem. amplified neg.-working photoresist compn.)

RN 270563-93-4 HCAPLUS

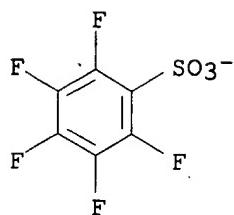
CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47480-44-4
CMF C24 H19 S2

CM 2

CRN 46377-88-2
CMF C6 F5 O3 S



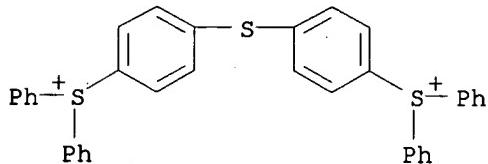
RN 270563-96-7 HCAPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2

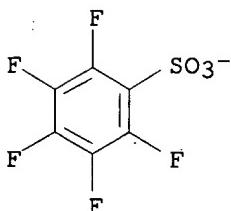
CMF C36 H28 S3



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



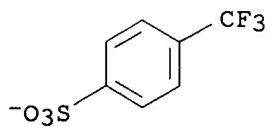
RN 279244-39-2 HCAPLUS

CN Sulfonium, (4-butoxyphenyl)diphenyl-, salt with 4-
(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

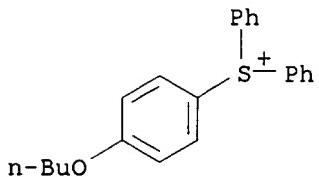
CM 1

CRN 120998-63-2

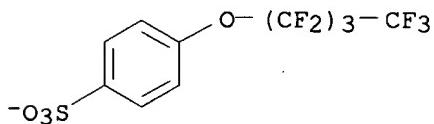
CMF C7 H4 F3 O3 S



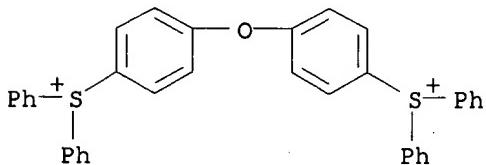
CM 2

CRN 112406-00-5
CMF C22 H23 O SRN 279244-43-8 HCPLUS
CN Sulfonium, (oxydi-4,1-phenylene)bis[diphenyl-, salt with
4-(nonafluorobutoxy)benzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

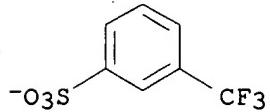
CRN 279244-42-7
CMF C10 H4 F9 O4 S

CM 2

CRN 279244-41-6
CMF C36 H28 O S2RN 349647-26-3 HCPLUS
CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with
3-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

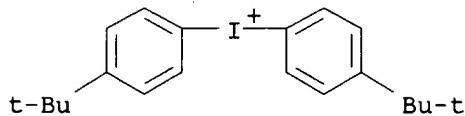
CM 1

CRN 104994-84-5
 CMF C7 H4 F3 O3 S



CM 2

CRN 61267-44-5
 CMF C20 H26 I



IT 349647-14-9 349647-16-1 349647-18-3
 349652-48-8

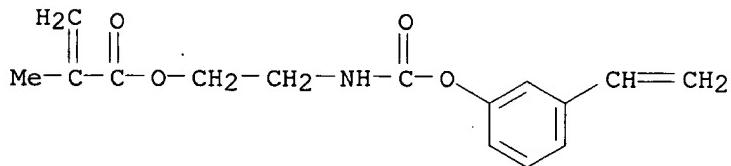
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (resin in electron beam- or x-ray-sensitive chem. amplified neg
 -working photoresist compn.)

RN 349647-14-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-[[[3-ethenylphenoxy]carbonyl]amino]ethyl ester, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

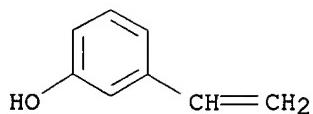
CM 1

CRN 349647-13-8
 CMF C15 H17 N O4



CM 2

CRN 620-18-8
 CMF C8 H8 O



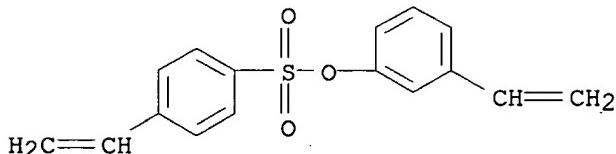
RN 349647-16-1 HCPLUS

CN Benzenesulfonic acid, 4-ethenyl-, 3-ethenylphenyl ester, polymer with
3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 349647-15-0

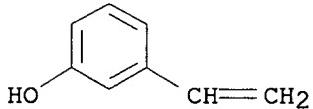
CMF C16 H14 O3 S



CM 2

CRN 620-18-8

CMF C8 H8 O



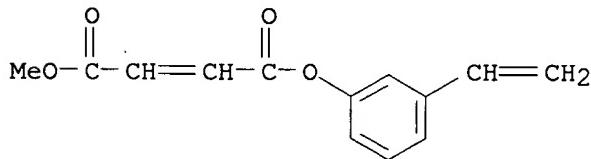
RN 349647-18-3 HCPLUS

CN 2-Butenedioic acid, 3-ethenylphenyl methyl ester, polymer with
3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

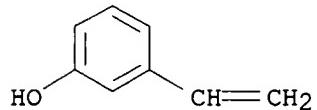
CRN 349647-17-2

CMF C13 H12 O4



CM 2

CRN 620-18-8
 CMF C8 H8 O



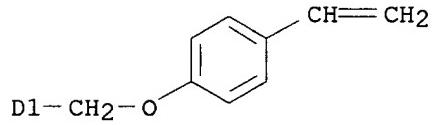
RN 349652-48-8 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with 4-ethenyl-1,2-dimethoxybenzene and
 ethenyl[(4-ethenylphenoxy)methyl]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 349652-44-4
 CMF C17 H16 O
 CCI IDS

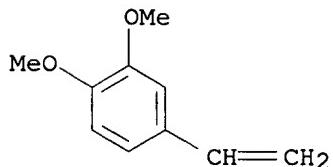


D1-CH=CH₂



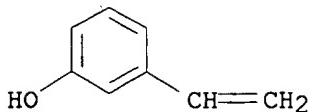
CM 2

CRN 6380-23-0
 CMF C10 H12 O2



CM 3

CRN 620-18-8
 CMF C8 H8 O



L33 ANSWER 18 OF 25 HCAPLUS COPYRIGHT 2003 ACS
 AN 2001:654962 HCAPLUS
 DN 135:218735
 TI Chemically amplified radiation-sensitive **negative**
 resists containing acid generators associating fluorinated anions
 IN Adegawa, Yutaka
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 30 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-038
 ICS C08F012-24; C08K005-375; C08L025-18; C08L101-06; G03F007-004;
 H01L021-027; C07C025-18; C07C043-23; C07C233-25; C07C381-12
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 38, 76
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2001242625	A2	20010907	JP 2000-49639	20000225
PRAI JP 2000-49639		20000225		
OS MARPAT 135:218735				
GI				

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The resists, useful for x-ray or electron-beam lithog., comprise (A) alkali-sol: resins contg. (hydrogenated) poly(vinyl phenol) alk(en)yl or aryl(alkyl) ethers, (B) acid-sensitive crosslinking agents, and (C) radiation-sensitive acid generators I-III [R1-37 = H, alkyl(oxy), OH, halo, SR38 (R38 = alkyl, aryl); X = fluorobenzenesulfonate, fluoronaphthalenesulfonate, or fluoroanthracenesulfonate anion]. The resists show good balance of resln., sensitivity, and pattern profile and are useful for semiconductor fabrication process.
 ST radiation sensitive **neg resist** acid generator;
 hydroxystyrene ether electron beam resist microfabrication;
 phenylsulfonium fluorobenzenesulfonate radiation sensitive acid generator;
 amylphenyliodinium acid generator radiation sensitive resist
 IT Resists
 (neg.-working, radiation-sensitive, chem. amplified;
 radiation-sensitive resists contg. fluorinated-anion-assocd. onium salts as acid generators)
 IT Crosslinking agents
 (radiation sensitive; radiation-sensitive resists contg.
 fluorinated-anion-assocd. onium salts as acid generators)

- IT Electron beam lithography
Semiconductor device fabrication
X-ray lithography
(radiation-sensitive resists contg. fluorinated-anion-assocd. onium salts as acid generators)
- IT **Resists**
(radiation-sensitive, neg., chem.-amplified;
radiation-sensitive resists contg. fluorinated-anion-assocd. onium salts as acid generators)
- IT 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate
279218-84-7P
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(in prepn. of radiation-sensitive acid generators for chem. amplified neg. resists)
- IT 75-59-2, Tetramethylammonium hydroxide 832-53-1,
Pentafluorobenzenesulfonyl chloride 945-51-7, Diphenylsulfoxide
2049-95-8, tert-Amylbenzene **3744-08-9**, Triphenylsulfonium iodide
7758-05-6, Potassium iodate 12027-06-4, Ammonium iodide
RL: RCT (Reactant); RACT (Reactant or reagent)
(in prepn. of radiation-sensitive acid generators for chem. amplified neg. resists)
- IT 50-00-0, Formalin, reactions 79-30-1, Isobutyryl chloride 123-30-8,
p-Aminophenol
RL: RCT (Reactant); RACT (Reactant or reagent)
(in prepn. of radiation-sensitive crosslinking agents for chem. amplified neg. resists)
- IT 74-88-4, Methyl iodide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(methylation agents; in prepn. of etherized poly(vinyl phenols) for radiation-sensitive chem. amplified resists)
- IT **270563-93-4**
RL: CAT (Catalyst use); USES (Uses)
(radiation-sensitive acid generators; radiation-sensitive resists contg. fluorinated-anion-assocd. onium salts as acid generators)
- IT **153698-46-5P**, Triphenylsulfonium pentafluorobenzenesulfonate
338445-34-4P
RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(radiation-sensitive acid generators; radiation-sensitive resists contg. fluorinated-anion-assocd. onium salts as acid generators)
- IT **24979-69-9DP**, ethers 24979-70-2DP, VP 8000, Me ethers
95418-60-3DP, 4-tert-Butoxystyrene homopolymer, hydrolyzed
149614-53-9DP, 3-Hydroxystyrene-4-hydroxystyrene copolymer, ethers
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(radiation-sensitive resists contg. fluorinated-anion-assocd. onium salts as acid generators)
- IT 110726-28-8DP, Trisp PA, hydroxymethylated or methoxymethylated
244057-73-6P
RL: PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(radiation-sensitive resists contg. fluorinated-anion-assocd. onium salts as acid generators)
- IT 1320-67-8, Propylene glycol monomethyl ether 84540-57-8, Propylene glycol monomethyl ether acetate
RL: TEM (Technical or engineered material use); USES (Uses)

(radiation-sensitive resists contg. fluorinated-anion-assocd. onium salts as acid generators)

IT 279218-84-7P

RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(in prepn. of radiation-sensitive acid generators for chem. amplified neg. resists)

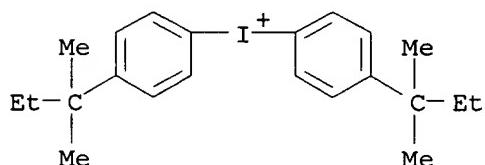
RN 279218-84-7 HCAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

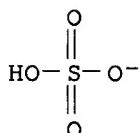
CMF C22 H30 I



CM 2

CRN 14996-02-2

CMF H O4 S



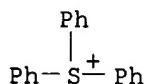
IT 3744-08-9, Triphenylsulfonium iodide

RL: RCT (Reactant); RACT (Reactant or reagent)

(in prepn. of radiation-sensitive acid generators for chem. amplified neg. resists)

RN 3744-08-9 HCAPLUS

CN Sulfonium, triphenyl-, iodide (8CI, 9CI) (CA INDEX NAME)



I^-

IT 270563-93-4

RL: CAT (Catalyst use); USES (Uses)

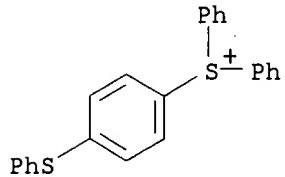
(radiation-sensitive acid generators; radiation-sensitive resists
contg. fluorinated-anion-assocd. onium salts as acid generators)

RN 270563-93-4 HCPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

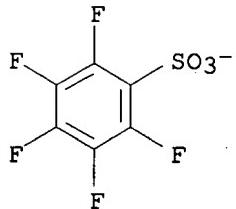
CM 1

CRN 47480-44-4
CMF C24 H19 S2



CM 2

CRN 46377-88-2
CMF C6 F5 O3 S



IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
338445-34-4P

RL: CAT (Catalyst use); PNU (Preparation, unclassified); PREP
(Preparation); USES (Uses)

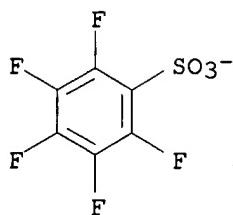
(radiation-sensitive acid generators; radiation-sensitive resists
contg. fluorinated-anion-assocd. onium salts as acid generators)

RN 153698-46-5 HCPLUS

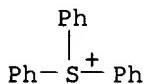
CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
(9CI) (CA INDEX NAME)

CM 1

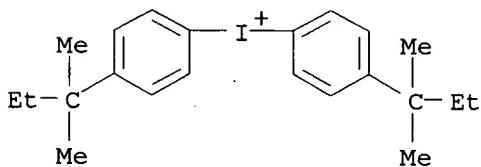
CRN 46377-88-2
CMF C6 F5 O3 S



CM 2

CRN 18393-55-0
CMF C18 H15 SRN 338445-34-4 HCPLUS
CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with pentafluoroethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4
CMF C22 H30 I

CM 2

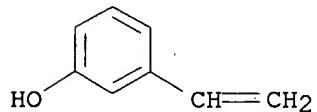
CRN 108410-37-3
CMF C2 F5 O3 S

-O3S-CF2-CF3

IT 24979-69-9DP, ethers 149614-53-9DP, 3-Hydroxystyrene-4-hydroxystyrene copolymer, ethers
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(radiation-sensitive resists contg. fluorinated-anion-assocd. onium salts as acid generators)
RN 24979-69-9 HCPLUS

CN Phenol, 3-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

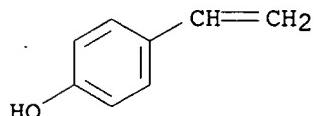
CM 1

CRN 620-18-8
CMF C8 H8 O

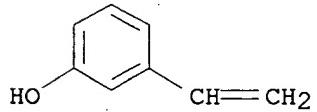
RN 149614-53-9 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 2628-17-3
CMF C8 H8 O

CM 2

CRN 620-18-8
CMF C8 H8 O

L33 ANSWER 19 OF 25 HCPLUS COPYRIGHT 2003 ACS

AN 2001:524739 HCPLUS

DN 135:114444

TI Electron beam or x-ray negative-working resist composition

IN Aoai, Toshiaki; Adegawa, Yutaka; Yagihara, Morio

PA Fuji Photo Film Co., Ltd., Japan

SO Eur. Pat. Appl., 85 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM G03F007-038

ICS G03F007-004; G03F007-028

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 36, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1117004	A2	20010718	EP 2001-100113	20010112
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001337452	A2	20011207	JP 2001-5374	20010112
PRAI	JP 2000-4766	A	20000113		
	JP 2000-84469	A	20000324		
AB	The invention relates to a neg.-working resist compn. useful for super microlithog. such as VLSI and high-capacity microchips and to a compn. capable of forming microfine patterns using X-rays and an electron beam, and to a compn. suitable for working of semiconductor devices using an electron beam. A neg.-working resist compn. for electron beams or x-rays comprises (a) a compd. generating an acid and/or radical species by the irradn. of electron beams or x-rays, (b) a resin which is insol. in H ₂ O and sol. in an alkali aq. soln., (c) a crosslinking agent causing crosslinking with the resin of component (b) by the action of an acid, and (d) a compd. having .gtoreq.1 unsatd. bond capable of being polymd. by an acid and/or a radical, and a neg .-working resist compn. for electron beams or x-rays comprising (a) a compd. generating an acid and/or radical species by the irradn. of electron beams or x-rays, (b') a resin having .gtoreq.1 unsatd. bond polymerizable by an acid and/or an alkali, which is insol. in H ₂ O but sol. in an alkali aq. soln., and (c) a crosslinking agent causing crosslinking with the resin (b') by the action of an acid are disclosed.				
ST	electron beam x ray neg photoresist crosslinking hydroxystyrene polymer				
IT	Photoresists (chem.-amplified; neg.-working photoresist compn. for X-ray or electron beam lithog. contg. alkali-sol. resin and acidic crosslinking agent)				
IT	Crosslinking agents Electron beam lithography X-ray lithography (neg.-working photoresist compn. for X-ray or electron beam lithog. contg. alkali-sol. resin and acidic crosslinking agent)				
IT	3089-11-0P 32449-09-5P RL: DEV (Device component use); IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses) (crosslinking agent; crosslinking agent for neg.-working photoresist compn. for X-ray or electron beam lithog.)				
IT	153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate 168634-95-5P 258341-98-9P 270563-93-4P 270563-96-7P 279244-43-8P 349619-92-7P 349647-26-3P RL: DEV (Device component use); IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses) (photoacid generator; acid-generating agent in neg.-working photoresist compn. for X-ray or electron beam lithog.)				
IT	15625-89-5, Trimethylolpropane triacrylate 17831-71-9, Tetraethyleneglycol diacrylate 29570-58-9, Dipentaerythritol hexaacrylate RL: DEV (Device component use); NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses) (polymerizable monomer in neg.-working photoresist)				

compn. for X-ray or electron beam lithog.)

IT 161679-94-3P 161679-95-4P 161679-98-7P 162846-57-3P 185502-11-8P
 185502-14-1P 185502-15-2P 197087-73-3P 197087-74-4P
 RL: DEV (Device component use); IMF (Industrial manufacture); MOA
 (Modifier or additive use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (synthesis of acid crosslinking agent for **neg.-working**
photoresist compn. for X-ray or electron beam lithog.)

IT 270564-02-8P, Tetramethylammonium pentafluorobenzenesulfonate
 RL: DEV (Device component use); IMF (Industrial manufacture); SPN
 (Synthetic preparation); PREP (Preparation); USES (Uses)
 (synthesis of acid-generating agent for **neg.-working**
photoresist compn. for X-ray or electron beam lithog.)

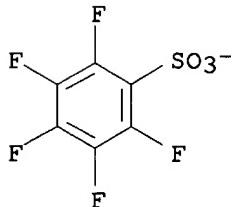
IT 24979-73-5P, 3-Hydroxystyrene-styrene copolymer 24979-74-6P,
 4-Hydroxystyrene-styrene copolymer 110123-10-9P, 4-Hydroxystyrene-2-
 hydroxyethyl acrylate copolymer 171429-59-7P, 4-Hydroxystyrene-4-
 acetoxystyrene copolymer 185405-14-5P **349647-01-4P**
349647-02-5P **349647-03-6P** **349647-04-7P**
 349647-05-8P 349647-06-9P 349647-07-0P 349647-08-1P 349647-10-5P
 349647-12-7P **349647-14-9P** **349647-16-1P**
349647-18-3P 349647-19-4P 349647-21-8P 349647-23-0P
 349652-45-5P 349652-47-7P **349652-48-8P**
 RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer
 in formulation); SPN (Synthetic preparation); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)
 (synthesis of alkali-sol. resin for **neg.-working**
photoresist compn. for X-ray or electron beam lithog.)

IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
168634-95-5P **258341-98-9P** **270563-93-4P**
270563-96-7P **279244-43-8P** **349619-92-7P**
349647-26-3P
 RL: DEV (Device component use); IMF (Industrial manufacture); MOA
 (Modifier or additive use); PREP (Preparation); USES (Uses)
 (photoacid generator; acid-generating agent in **neg.-working**
photoresist compn. for X-ray or electron beam lithog.)

RN 153698-46-5 HCPLUS

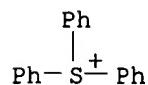
CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
 (9CI) (CA INDEX NAME)

CM 1

CRN 46377-88-2
CMF C6 F5 O3 S

CM 2

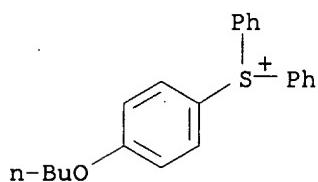
CRN 18393-55-0
 CMF C18 H15 S



RN 168634-95-5 HCPLUS
 CN Sulfonium, (4-butoxyphenyl)diphenyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

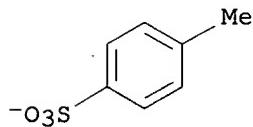
CM 1

CRN 112406-00-5
 CMF C22 H23 O S



CM 2

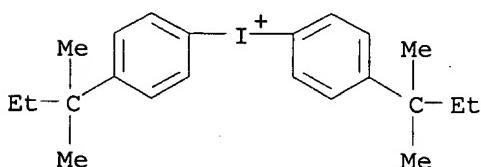
CRN 16722-51-3
 CMF C7 H7 O3 S



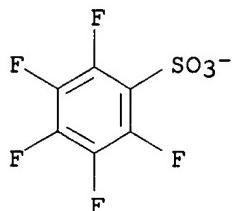
RN 258341-98-9 HCPLUS
 CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4
 CMF C22 H30 I



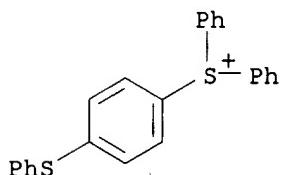
CM 2

CRN 46377-88-2
CMF C6 F5 O3 S

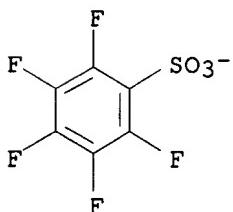
RN 270563-93-4 HCPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47480-44-4
CMF C24 H19 S2

CM 2

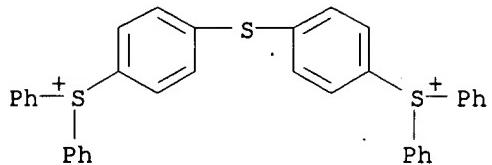
CRN 46377-88-2
CMF C6 F5 O3 S

RN 270563-96-7 HCPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

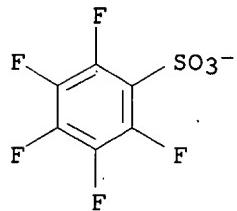
CM 1

CRN 74227-34-2
 CMF C36 H28 S3



CM 2

CRN 46377-88-2
 CMF C6 F5 O3 S

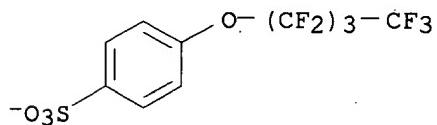


RN 279244-43-8 HCAPLUS

CN Sulfonium, (oxydi-4,1-phenylene)bis[diphenyl-, salt with
 4-(nonafluorobutoxy)benzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

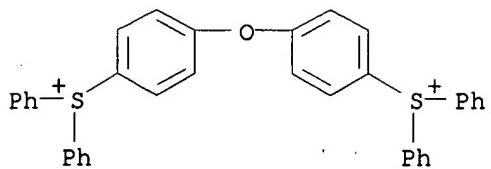
CM 1

CRN 279244-42-7
 CMF C10 H4 F9 O4 S



CM 2

CRN 279244-41-6
 CMF C36 H28 O S2



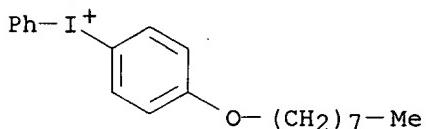
RN 349619-92-7 HCPLUS

CN Iodonium, [4-(octyloxy)phenyl]phenyl-, salt with 4-fluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 121239-74-5

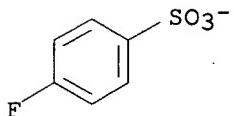
CMF C20 H26 I O



CM 2

CRN 61657-38-3

CMF C6 H4 F O3 S



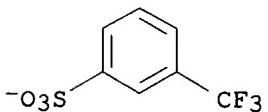
RN 349647-26-3 HCPLUS

CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with 3-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

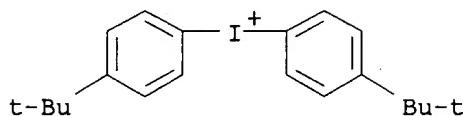
CRN 104994-84-5

CMF C7 H4 F3 O3 S



CM 2

CRN 61267-44-5
 CMF C20 H26 I



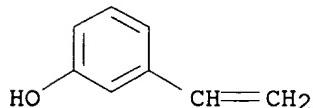
IT 24979-73-5P, 3-Hydroxystyrene-styrene copolymer
 349647-01-4P 349647-02-5P 349647-03-6P
 349647-04-7P 349647-14-9P 349647-16-1P
 349647-18-3P 349652-48-8P
 RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (synthesis of alkali-sol. resin for neg.-working photoresist compn. for X-ray or electron beam lithog.)

RN 24979-73-5 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 620-18-8
 CMF C8 H8 O



CM 2

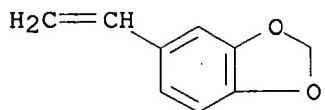
CRN 100-42-5
 CMF C8 H8

H₂C=CH-Ph

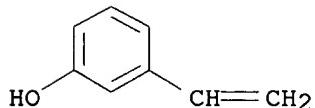
RN 349647-01-4 HCAPLUS
 CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,3-benzodioxole (9CI) (CA INDEX NAME)

CM 1

CRN 7315-32-4
 CMF C9 H8 O2



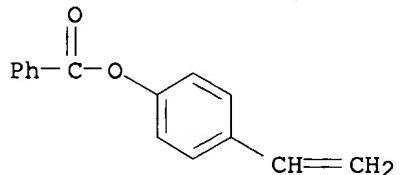
CM 2

CRN 620-18-8
CMF C8 H8 O

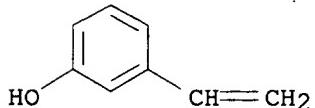
RN 349647-02-5 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 4-ethenylphenyl benzoate (9CI) (CA INDEX NAME)

CM 1

CRN 32568-59-5
CMF C15 H12 O2

CM 2

CRN 620-18-8
CMF C8 H8 O

RN 349647-03-6 HCPLUS

CN Phenol, 3-ethenyl-, polymer with ethenylbenzene and 5-ethenyl-1,3-benzodioxole (9CI) (CA INDEX NAME)

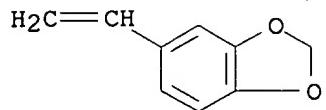
CM 1

CRN 7315-32-4

WALKE 09/942768

Page 180

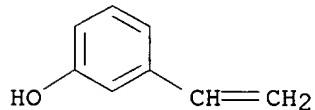
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CM 2

CRN 620-18-8

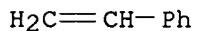
CMF C8 H8 O



CM 3

CRN 100-42-5

CMF C8 H8



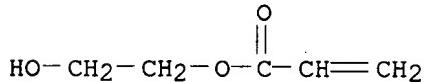
RN 349647-04-7 HCAPLUS

CN 2-Propenoic acid, 2-hydroxyethyl ester, polymer with ethenylbenzene and 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 818-61-1

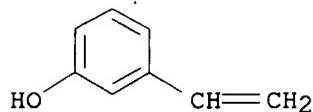
CMF C5 H8 O3



CM 2

CRN 620-18-8

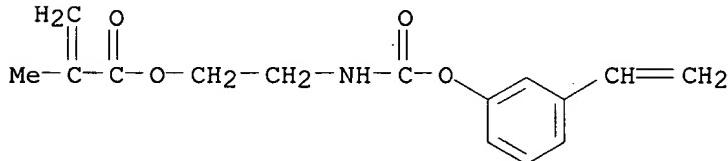
CMF C8 H8 O



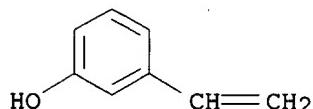
CM 3

CRN 100-42-5
CMF C8 H8 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$ RN 349647-14-9 HCPLUS
CN 2-Propenoic acid, 2-methyl-, 2-[(3-ethenylphenoxy)carbonyl]aminoethyl ester, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

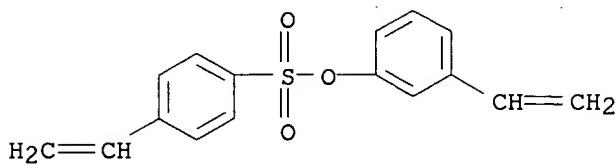
CRN 349647-13-8
CMF C15 H17 N O4

CM 2

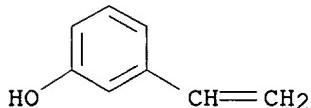
CRN 620-18-8
CMF C8 H8 ORN 349647-16-1 HCPLUS
CN Benzenesulfonic acid, 4-ethenyl-, 3-ethenylphenyl ester, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 349647-15-0
CMF C16 H14 O3 S



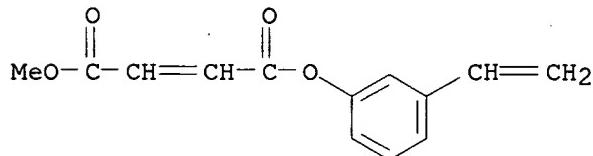
CM 2

CRN 620-18-8
CMF C8 H8 O

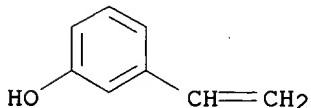
RN 349647-18-3 HCPLUS

CN 2-Butenedioic acid, 3-ethenylphenyl methyl ester, polymer with
3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 349647-17-2
CMF C13 H12 O4

CM 2

CRN 620-18-8
CMF C8 H8 O

RN 349652-48-8 HCPLUS

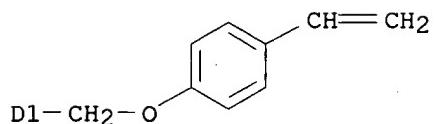
CN Phenol, 3-ethenyl-, polymer with 4-ethenyl-1,2-dimethoxybenzene and
ethenyl[(4-ethenylphenoxy)methyl]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 349652-44-4
 CMF C17 H16 O
 CCI IDS

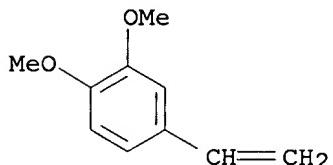


D1-CH=CH₂



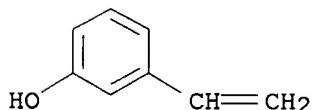
CM 2

CRN 6380-23-0
 CMF C10 H12 O₂



CM 3

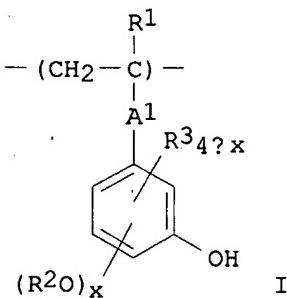
CRN 620-18-8
 CMF C8 H8 O



L33 ANSWER 20 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2001:524737 HCPLUS
 DN 135:114443
 TI Negative-working resist composition
 IN Uenishi, Kazuya; Adegawa, Yutaka; Shirakawa, Koji
 PA Fuji Photo Film Co., Ltd., Japan
 SO Eur. Pat. Appl., 87 pp.
 CODEN: EPXXDW

DT Patent
 LA English
 IC ICM G03F007-004
 ICS G03F007-038
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 35, 36, 76
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1117002	A1	20010718	EP 2001-100188	20010117
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002049151	A2	20020215	JP 2000-235949	20000803
PRAI	JP 2000-8229	A	20000117		
	JP 2000-151477	A	20000523		
	JP 2000-235949	A	20000803		
OS	MARPAT 135:114443				
GI					



AB The invention relates to a neg.-working compn. useful in ultramicro-lithog. or other photofabrication for prodn. of VLSI or high-capacity microchips and to a neg.-working photoresists that can provide micropatterns using X-ray or electron beam, and that can be used in miniaturization processing of semiconductor devices using electron beams. The chem. amplification system neg.-working resist compn. for an electron beam and/or an x-ray, has excellent in sensitivity and resoln. and has a rectangular profile, comprising an alkali-sol. resin having structural units represented by (I), a compd. generating an acid by irradn. of the electron beam or the x-ray, and a crosslinking agent which initiates crosslinking by the acid.

ST neg photoresist crosslinking agent hydroxystyrene polymer

IT Photoresists

(chem.-amplified; neg.-working photoresist compn. for X-ray or electron beam lithog. contg. alkali-sol. resin and acidic crosslinking agent)

IT Crosslinking agents
 Electron beam lithography
 X-ray lithography

(neg.-working photoresist compn. for X-ray or electron beam lithog. contg. alkali-sol. resin and acidic crosslinking agent)

IT 3089-11-0P 32449-09-5P
 RL: DEV (Device component use); IMF (Industrial manufacture); MOA
 (Modifier or additive use); PREP (Preparation); USES (Uses)
 (crosslinking agent; crosslinking agent in neg.-working
 photoresist compn. for X-ray or electron beam lithog.)

IT 484-47-9P, 2,4,5-Triphenylimidazole 24979-70-2P, Poly(4-hydroxystyrene)
 27029-76-1P
 RL: DEV (Device component use); IMF (Industrial manufacture); MOA
 (Modifier or additive use); PREP (Preparation); USES (Uses)
 (neg.-working photoresist compn. for X-ray or
 electron beam lithog. contg.)

IT 220122-68-9P 270563-92-3P 270563-93-4P
 270563-96-7P 270563-98-9P 349619-84-7P
 349619-88-1P 349619-92-7P 349619-96-1P
 RL: DEV (Device component use); IMF (Industrial manufacture); MOA
 (Modifier or additive use); PREP (Preparation); USES (Uses)
 (photoacid generator; acid generating agent in neg.-working
 photoresist compn. for X-ray or electron beam lithog.)

IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
 RL: DEV (Device component use); IMF (Industrial manufacture); SPN
 (Synthetic preparation); PREP (Preparation); USES (Uses)
 (photoacid generator; synthesis of acid-generating agent for
 neg.-working photoresist compn. for X-ray or electron
 beam lithog.)

IT 161679-94-3P 161679-95-4P 161679-98-7P 162846-57-3P 185502-11-8P
 185502-14-1P 185502-15-2P 197087-73-3P 197087-74-4P
 RL: DEV (Device component use); IMF (Industrial manufacture); MOA
 (Modifier or additive use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (synthesis of acid crosslinking agent for neg.-working
 photoresist compn. for X-ray or electron beam lithog.)

IT 258341-98-9P 270564-02-8P, Tetramethylammonium
 pentafluorobenzenesulfonate
 RL: DEV (Device component use); IMF (Industrial manufacture); SPN
 (Synthetic preparation); PREP (Preparation); USES (Uses)
 (synthesis of acid-generating agent for neg.-working
 photoresist compn. for X-ray or electron beam lithog.)

IT 24979-69-9P, Poly(3-hydroxystyrene) 24979-73-5P,
 3-Hydroxystyrene-styrene copolymer 149614-53-9P,
 3-Hydroxystyrene-4-hydroxystyrene copolymer 349619-43-8P
 349619-47-2P 349619-51-8P 349619-56-3P
 349619-61-0P 349619-65-4P 349619-68-7P
 349619-72-3P 349619-76-7P 349619-80-3P
 RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer
 in formulation); SPN (Synthetic preparation); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)
 (synthesis of alkali-sol. polymer resin for neg.-working
 photoresist compn. for X-ray or electron beam lithog.)

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

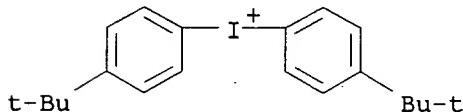
- (1) Anon; PATENT ABSTRACTS OF JAPAN 1990, V014(078), PP-1006
- (2) Anon; PATENT ABSTRACTS OF JAPAN 1998, V1998(05)
- (3) Anon; PATENT ABSTRACTS OF JAPAN 2000, V2000(06)
- (4) Fuji Photo Film Co Ltd; JP 05045878 A 1993 HCPLUS
- (5) Fuji Photo Film Co Ltd; JP 10016423 A 1998 HCPLUS
- (6) Fuji Photo Film Co Ltd; EP 1076261 A 2001 HCPLUS
- (7) Japan Synthetic Rubber Co Ltd; EP 0633499 A 1995 HCPLUS
- (8) Jsr Co Ltd; JP 10333323 A 1998 HCPLUS

- (9) Jsr Corp; EP 0898201 A 1999 HCPLUS
 (10) Ota, T; US 6048666 A 2000 HCPLUS
 (11) Tokyo Ohka Kogyo Co Ltd; JP 2000089459 A 2000 HCPLUS
 (12) Tosoh Corp; JP 01293339 A 1989 HCPLUS
 IT 220122-68-9P 270563-92-3P 270563-93-4P
 270563-96-7P 270563-98-9P 349619-84-7P
 349619-88-1P 349619-92-7P 349619-96-1P
 RL: DEV (Device component use); IMF (Industrial manufacture); MOA
 (Modifier or additive use); PREP (Preparation); USES (Uses)
 (photoacid generator; acid generating agent in neg.-working
 photoresist compn. for X-ray or electron beam lithog.)
 RN 220122-68-9 HCPLUS
 CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with
 pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 61267-44-5

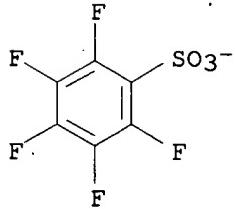
CMF C20 H26 I



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S

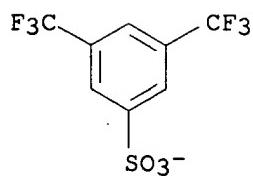


- RN 270563-92-3 HCPLUS
 CN Sulfonium, bis(4-methylphenyl)phenyl-, salt with 3,5-bis(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

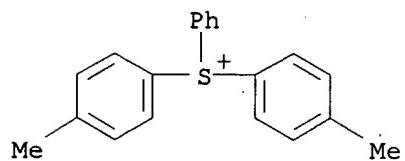
CM 1

CRN 213740-84-2

CMF C8 H3 F6 O3 S



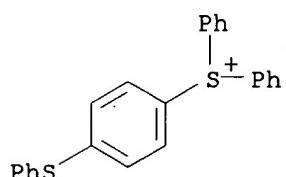
CM 2

CRN 70082-58-5
CMF C20 H19 S

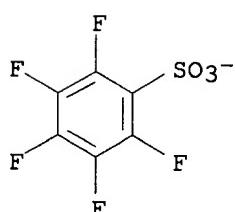
RN 270563-93-4 HCPLUS

CN Sulfonium, diphenyl[4-(phenylthio)phenyl]-, salt with
pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47480-44-4
CMF C24 H19 S2

CM 2

CRN 46377-88-2
CMF C6 F5 O3 S

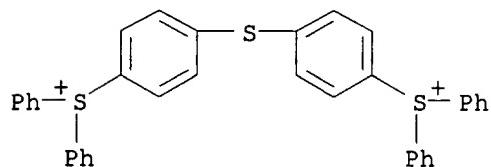
RN 270563-96-7 HCPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with
pentafluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 74227-34-2

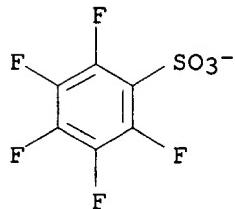
CMF C36 H28 S3



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



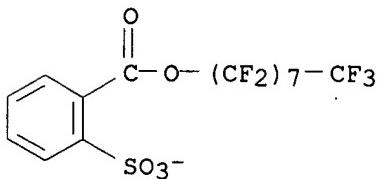
RN 270563-98-9 HCPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[bis(4-methylphenyl)-, salt with
1-(heptadecafluoroctyl) 2-sulfobenzoate (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 270563-97-8

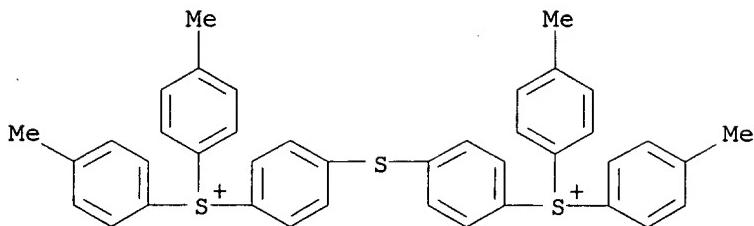
CMF C15 H4 F17 O5 S



CM 2

CRN 222722-48-7

CMF C40 H36 S3



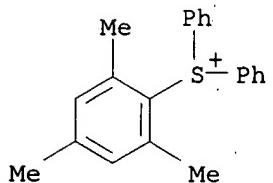
RN 349619-84-7 HCPLUS

CN Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, salt with
2-nitro-4-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX
NAME)

CM 1

CRN 47191-44-6

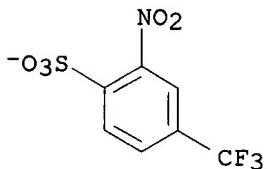
CMF C21 H21 S



CM 2

CRN 46806-65-9

CMF C7 H3 F3 N O5 S



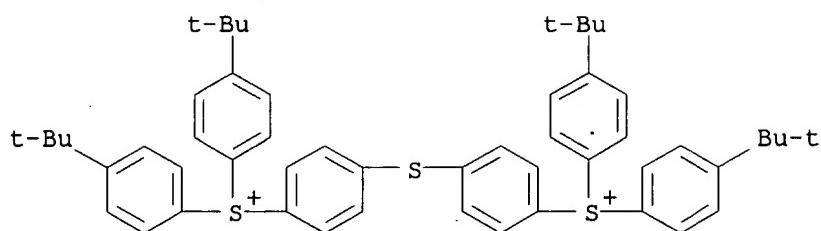
RN 349619-88-1 HCPLUS

CN Sulfonium, (thiodi-4,1-phenylene)bis[bis[4-(1,1-dimethylethyl)phenyl]-, salt with 4-fluorobenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

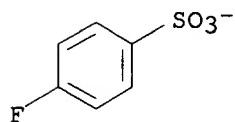
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CRN 343629-56-1

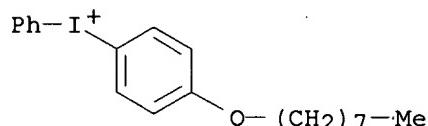
CMF C52 H60 S3



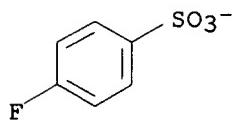
CM 2

CRN 61657-38-3
CMF C6 H4 F O3 SRN 349619-92-7 HCAPLUS
CN Iodonium, [4-(octyloxy)phenyl]phenyl-, salt with 4-fluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

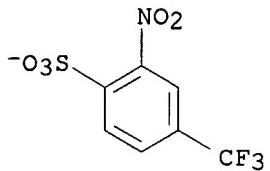
CRN 121239-74-5
CMF C20 H26 I O

CM 2

CRN 61657-38-3
CMF C6 H4 F O3 SRN 349619-96-1 HCAPLUS
CN Iodonium, bis(4-methylphenyl)-, salt with 2-nitro-4-(trifluoromethyl)benzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

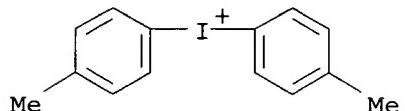
CM 1

CRN 46806-65-9
 CMF C7 H3 F3 N O5 S



CM 2

CRN 46449-56-3
 CMF C14 H14 I



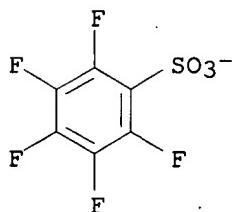
IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
 RL: DEV (Device component use); IMF (Industrial manufacture); SPN
 (Synthetic preparation); PREP (Preparation); USES (Uses)
 (photoacid generator; synthesis of acid-generating agent for
 neg.-working photoresist compn. for X-ray or electron
 beam lithog.)

RN 153698-46-5 HCAPLUS

CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
 (9CI) (CA INDEX NAME)

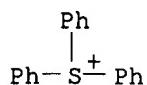
CM 1

CRN 46377-88-2
 CMF C6 F5 O3 S



CM 2

CRN 18393-55-0
 CMF C18 H15 S



IT 258341-98-9P

RL: DEV (Device component use); IMF (Industrial manufacture); SPN
 (Synthetic preparation); PREP (Preparation); USES (Uses)
 (synthesis of acid-generating agent for neg.-working
 photoresist compn. for X-ray or electron beam lithog.)

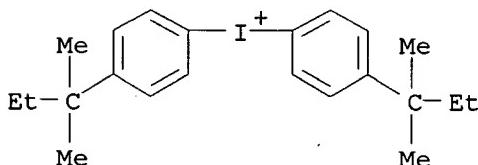
RN 258341-98-9 HCAPLUS

CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
 pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4

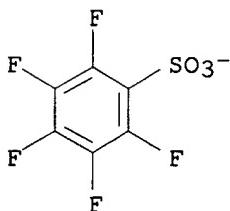
CMF C22 H30 I



CM 2

CRN 46377-88-2

CMF C6 F5 O3 S



IT 24979-69-9P, Poly(3-hydroxystyrene) 24979-73-5P,

3-Hydroxystyrene-styrene copolymer 149614-53-9P,

3-Hydroxystyrene-4-hydroxystyrene copolymer 349619-43-8P

349619-47-2P 349619-51-8P 349619-56-3P

349619-61-0P 349619-65-4P 349619-68-7P

349619-72-3P 349619-76-7P 349619-80-3P

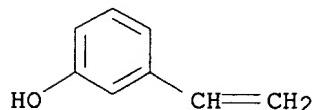
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer
 in formulation); SPN (Synthetic preparation); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)

(synthesis of alkali-sol. polymer resin for neg.-working
 photoresist compn. for X-ray or electron beam lithog.)

RN 24979-69-9 HCPLUS
 CN Phenol, 3-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

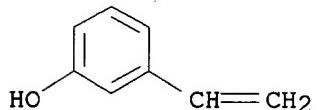
CRN 620-18-8
 CMF C8 H8 O



RN 24979-73-5 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 620-18-8
 CMF C8 H8 O



CM 2

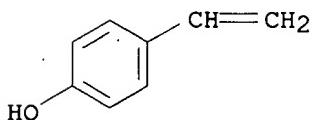
CRN 100-42-5
 CMF C8 H8

H₂C=CH-Ph

RN 149614-53-9 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

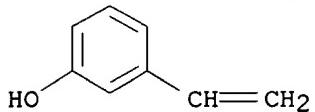
CM 1

CRN 2628-17-3
 CMF C8 H8 O



CM 2

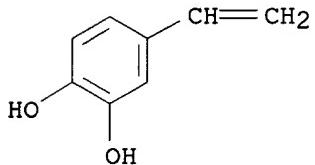
CRN 620-18-8
 CMF C8 H8 O



RN 349619-43-8 HCPLUS
 CN 1,2-Benzenediol, 4-ethenyl-, polymer with 3-ethenylphenol (9CI) (CA INDEX
 NAME)

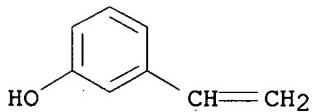
CM 1

CRN 6053-02-7
 CMF C8 H8 O2



CM 2

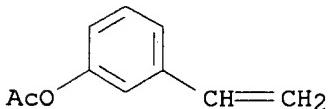
CRN 620-18-8
 CMF C8 H8 O



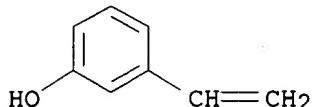
RN 349619-47-2 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with 3-ethenylphenyl acetate (9CI) (CA INDEX
 NAME)

CM 1

CRN 2454-30-0
 CMF C10 H10 O2



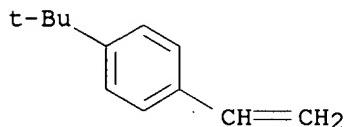
CM 2

CRN 620-18-8
CMF C8 H8 O

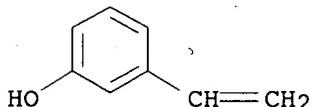
RN 349619-51-8 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 1-(1,1-dimethylethyl)-4-ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 1746-23-2
CMF C12 H16

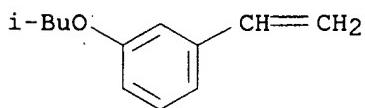
CM 2

CRN 620-18-8
CMF C8 H8 O

RN 349619-56-3 HCAPLUS

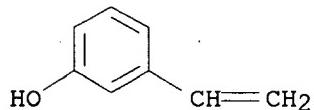
CN Phenol, 3-ethenyl-, polymer with 1-ethenyl-3-(2-methylpropoxy)benzene
(9CI) (CA INDEX NAME)

CM 1

CRN 349619-55-2
CMF C12 H16 O

CM 2

CRN 620-18-8
 CMF C8 H8 O

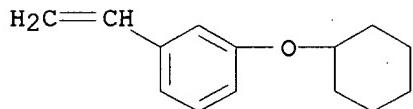


RN 349619-61-0 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 1-(cyclohexyloxy)-3-ethenylbenzene (9CI)
 (CA INDEX NAME)

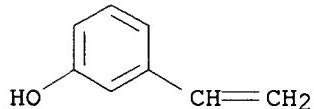
CM 1

CRN 349619-60-9
 CMF C14 H18 O



CM 2

CRN 620-18-8
 CMF C8 H8 O

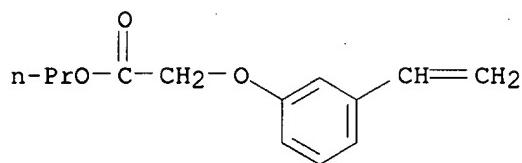


RN 349619-65-4 HCPLUS

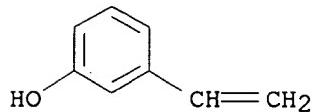
CN Acetic acid, (3-ethenylphenoxy)-, propyl ester, polymer with
 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 349619-64-3
 CMF C13 H16 O3



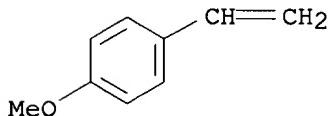
CM 2

CRN 620-18-8
CMF C₈ H₈ O

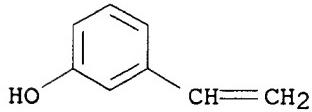
RN 349619-68-7 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 1-ethenyl-4-methoxybenzene (9CI) (CA INDEX NAME)

CM 1

CRN 637-69-4
CMF C₉ H₁₀ O

CM 2

CRN 620-18-8
CMF C₈ H₈ O

RN 349619-72-3 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 1-butoxy-4-ethenylbenzene (9CI) (CA INDEX NAME)

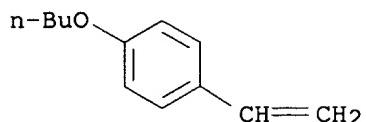
CM 1

CRN 105337-03-9

WALKE 09/942768

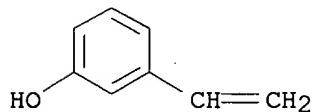
Page 198

CMF C12 H16 O



CM 2

CRN 620-18-8
CMF C8 H8 O

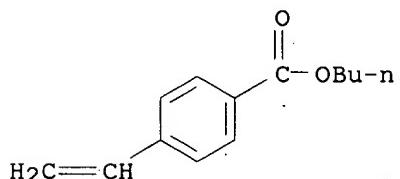


RN 349619-76-7 HCPLUS

CN Benzoic acid, 4-ethenyl-, butyl ester, polymer with 3-ethenylphenol (9CI)
(CA INDEX NAME)

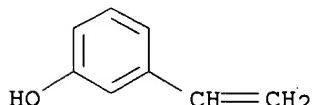
CM 1

CRN 2715-41-5
CMF C13 H16 O2



CM 2

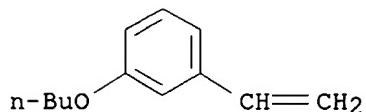
CRN 620-18-8
CMF C8 H8 O



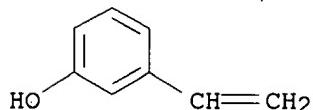
RN 349619-80-3 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 1-butoxy-3-ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 156660-60-5
CMF C12 H16 O

CM 2

CRN 620-18-8
CMF C8 H8 O

L33 ANSWER 21 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2001:469374 HCPLUS
 DN 135:84296
 TI Radiation-sensitive chemically amplified **negative-working** resist compositions containing vinylbenzodioxole derivatives polymers
 IN Adekawa, Yutaka
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 30 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-038
 ICS C08F002-54; C08K005-00; C08L025-18; G03F007-004; G03F007-033;
 H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001174994	A2	20010629	JP 1999-358016	19991216
PRAI JP 1999-358016		19991216		

OS MARPAT 135:84296

AB The resist compns. contain (A) alk.-sol. resins involving structure units of 4-vinyl-1,3-benzodioxole derivs., compds. which generate acids by electron beam or x-ray irradn., acid-crosslinkable crosslinking agents, and optionally F- and/or silicone-based surfactants. The compns. satisfy properties of sensitivity, developability, and resist pattern profiles to the use of electron beam or x-ray.

ST radiation sensitive chem amplified **neg resist**;
 vinylbenzodioxole polymer alkali solv **neg resist**

IT Surfactants

- (F- and/or silicone-based; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole deriv. polymers)
- IT **Resists**
(neg.-working radiation-sensitive; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole deriv. polymers)
- IT **Electron beam resists**
(neg.-working; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole deriv. polymers)
- IT **X-ray resists**
(neg.; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole deriv. polymers)
- IT **Crosslinking agents**
(radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole derivs. polymers)
- IT **Polysiloxanes, uses**
RL: MOA (Modifier or additive use); USES (Uses)
(surfactant; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole derivs. polymers)
- IT **66003-78-9 157826-08-9**
RL: MOA (Modifier or additive use); USES (Uses)
(acid generator; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole derivs. polymers)
- IT **153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate 258341-98-9P**
RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(acid generator; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole derivs. polymers)
- IT **161679-94-3P 162846-57-3P**
RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(crosslinking agent; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole derivs. polymers)
- IT **3089-11-0 32449-09-5 161679-98-7 185502-11-8 185502-14-1
197087-73-3 197087-74-4 346694-57-3 346694-58-4**
RL: MOA (Modifier or additive use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(crosslinking agent; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole derivs. polymers)
- IT **3744-08-9P, Triphenylsulfonium iodide 258342-09-5P
270564-02-8P**
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate for acid generator; radiation-sensitive chem. amplified neg.-working **resist** compns. contg. vinylbenzodioxole derivs. polymers)
- IT **346694-37-9P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(radiation-sensitive chem. amplified neg.-working

resist compns. contg. vinylbenzodioxole deriv. polymers)

IT 346694-39-1P 346694-41-5P **346694-43-7P** 346694-45-9P
346694-47-1P 346694-48-2P **346694-50-6P** 346694-51-7P
346694-53-9P 346694-54-0P 346694-55-1P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (radiation-sensitive chem. amplified neg.-working
 resist compns. contg. vinylbenzodioxole derivs. polymers)

IT 945-51-7, Diphenyl sulfoxide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant for acid generator; radiation-sensitive chem. amplified
 neg.-working resist compns. contg. vinylbenzodioxole
 derivs. polymers)

IT 832-53-1, Pentafluorobenzenesulfonyl chloride 2049-95-8,
 tert-Amylbenzene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (starting material for acid generator; radiation-sensitive chem.
 amplified neg.-working resist compns. contg.
 vinylbenzodioxole derivs. polymers)

IT 110726-28-8, 1-[.alpha.-Methyl-.alpha.-(4-hydroxyphenyl)ethyl]-4-
 [.alpha.,.alpha.-bis(4-hydroxyphenyl)ethyl]benzene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (starting material for crosslinking agent; radiation-sensitive chem.
 amplified neg.-working resist compns. contg.
 vinylbenzodioxole derivs. polymers)

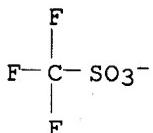
IT 137462-24-9, Megafac F 176 216679-67-3, Megafac R 08
 RL: MOA (Modifier or additive use); USES (Uses)
 (surfactant; radiation-sensitive chem. amplified neg.-working
 resist compns. contg. vinylbenzodioxole derivs. polymers)

IT **66003-78-9**
 RL: MOA (Modifier or additive use); USES (Uses)
 (acid generator; radiation-sensitive chem. amplified neg.
 -working resist compns. contg. vinylbenzodioxole derivs.
 polymers)

RN 66003-78-9 HCPLUS

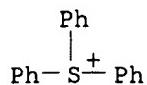
CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
 (CA INDEX NAME)

CM 1

CRN 37181-39-8
CMF C F3 O3 S

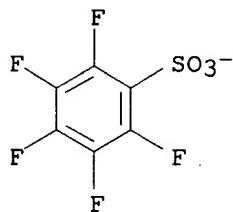
CM 2

CRN 18393-55-0
CMF C18 H15 S

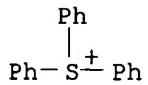


IT 153698-46-5P, Triphenylsulfonium pentafluorobenzenesulfonate
258341-98-9P
 RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (acid generator; radiation-sensitive chem. amplified **neg**
 -working **resist** compns. contg. vinylbenzodioxole derivs.
 polymers)
 RN 153698-46-5 HCAPLUS
 CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
 (9CI) (CA INDEX NAME)

CM 1

CRN 46377-88-2
CMF C6 F5 O3 S

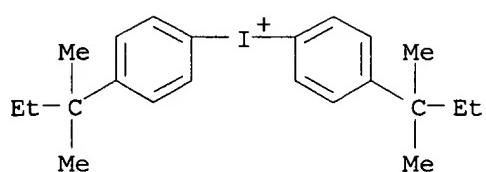
CM 2

CRN 18393-55-0
CMF C18 H15 S

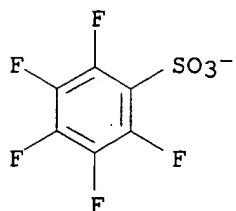
RN 258341-98-9 HCAPLUS
 CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with
 pentafluorobenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 249300-51-4
CMF C22 H30 I

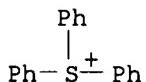


CM 2

CRN 46377-88-2
CMF C6 F5 O3 S

IT 3744-08-9p, Triphenylsulfonium iodide 258342-09-5p
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
 RACT (Reactant or reagent)
 (intermediate for acid generator; radiation-sensitive chem. amplified
 neg.-working resist compns. contg. vinylbenzodioxole
 derivs. polymers)

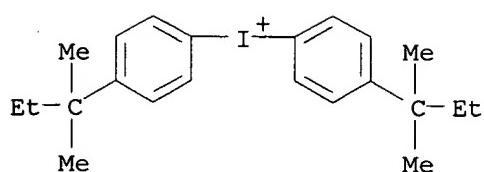
RN 3744-08-9 HCPLUS
 CN Sulfonium, triphenyl-, iodide (8CI, 9CI) (CA INDEX NAME)

I⁻

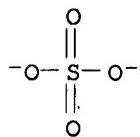
RN 258342-09-5 HCPLUS
 CN Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, sulfate (2:1) (9CI) (CA
 INDEX NAME)

CM 1

CRN 249300-51-4
CMF C22 H30 I



CM 2

CRN 14808-79-8
CMF O4 S

IT 346694-43-7P 346694-47-1P 346694-50-6P

346694-53-9P

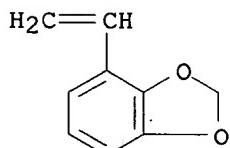
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(radiation-sensitive chem. amplified neg.-working resist compns. contg. vinylbenzodioxole derivs. polymers)

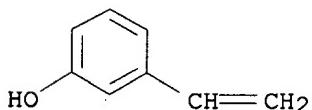
RN 346694-43-7 HCPLUS

CN Phenol, 3-ethenyl-, polymer with 4-ethenyl-1,3-benzodioxole (9CI) (CA INDEX NAME)

CM 1

CRN 104721-74-6
CMF C9 H8 O2

CM 2

CRN 620-18-8
CMF C8 H8 O

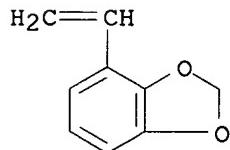
RN 346694-47-1 HCAPLUS

CN Carbonic acid, 1,1-dimethylethyl 4-ethenylphenyl ester, polymer with
4-ethenyl-1,3-benzodioxole and 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 104721-74-6

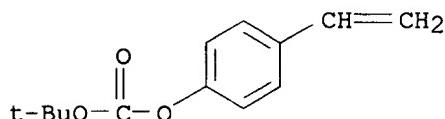
CMF C9 H8 O2



CM 2

CRN 87188-51-0

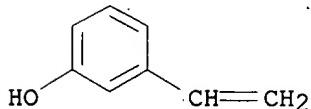
CMF C13 H16 O3



CM 3

CRN 620-18-8

CMF C8 H8 O



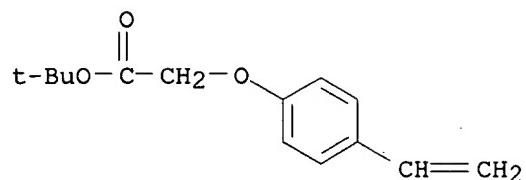
RN 346694-50-6 HCAPLUS

CN Acetic acid, (4-ethenylphenoxy)-, 1,1-dimethylethyl ester, polymer with
4-ethenyl-1,3-benzodioxole and 3-ethenylphenol (9CI) (CA INDEX NAME)

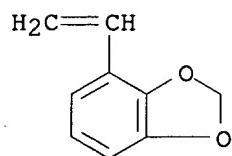
CM 1

CRN 142952-61-2

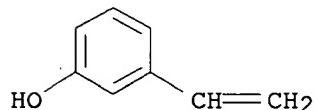
CMF C14 H18 O3



CM 2

CRN 104721-74-6
CMF C9 H8 O2

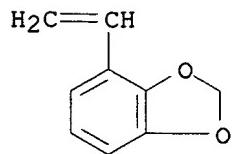
CM 3

CRN 620-18-8
CMF C8 H8 O

RN 346694-53-9 HCAPLUS

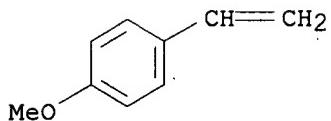
CN Phenol, 3-ethenyl-, polymer with 4-ethenyl-1,3-benzodioxole and 1-ethenyl-4-methoxybenzene (9CI) (CA INDEX NAME)

CM 1

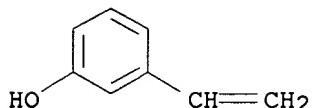
CRN 104721-74-6
CMF C9 H8 O2

CM 2

CRN 637-69-4
CMF C9 H10 O



CM 3

CRN 620-18-8
CMF C8 H8 O

L33 ANSWER 22 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 2001:451017 HCPLUS
 DN 135:53501
 TI Chemical amplification type **negative-working resist**
 composition for electron beams or x-rays
 IN Adegawa, Yutaka
 PA Fuji Photo Film Co., Ltd., Japan
 SO Eur. Pat. Appl., 72 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM G03F007-038
 ICS G03F007-004
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1109066	A1	20010620	EP 2000-127268	20001218
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001174995	A2	20010629	JP 1999-358022	19991216
	US 2001036590	A1	20011101	US 2000-737568	20001218
	US 6528233	B2	20030304		

PRAI JP 1999-358022 A 19991216

OS MARPAT 135:53501

AB The invention relates to a **neg. working resist** compn.
 capable of forming fine patterns using X-rays and electron beams, used in
 super-lithog. process for producing VLSI and high-capacity microchips and
 semiconductor devices and other photofabrication processes. A
 neg.-working chem. amplification-type resist compn. for electron beams or
 x-rays satisfying the characteristics of the sensitivity and
 resoln..bul.resist pattern for the use of electron beams or x-rays is
 provided. The chem. amplification-type **neg.-working**
resist compn. contains (a) an alkali-sol. resin having a wt.-av.
 mol. wt. of exceeding 3,000 and not larger than 1,000,000, (b) a

crosslinking agent causing crosslinkage by an acid, and (c) a compd. generating an acid by the irradn. of electron beams or x-rays, wherein the alkali-sol. resin has a specific structure.

ST neg resist electron beam x ray microchip photolithog

IT Photolithography

(chem. amplified neg.-working resist compn. for electron beams or x-rays)

IT Electron beam resists

X-ray resists

(chem.-amplified neg.-working resist compn. for electron beams or x-rays contg. alkali-sol. resin)

IT Crosslinking agents

(chem.-amplified neg.-working resist compn. for electron beams or x-rays contg. alkali-sol. resin and)

IT Negative photoresists

(chem.-amplified; chem.-amplified neg.-working resist compn. for electron beams or x-rays contg. alkali-sol. resin)

IT 345212-99-9P

RL: DEV (Device component use); MOA (Modifier or additive use); NUU (Other use, unclassified); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(chem.-amplified neg.-working resist compn. for electron beams or x-rays contg. alkali-sol. resin of)

IT 321164-59-4P 345212-25-1P 345212-26-2P 345212-27-3P

345212-28-4P 345212-29-5P 345212-30-8P

345212-32-0P 345212-34-2P 345212-36-4P **345212-37-5P**

345212-38-6P 345212-40-0P 345212-41-1P 345212-43-3P

345212-45-5P 345212-46-6P 345212-47-7P 345212-49-9P 345212-51-3P

345212-53-5P 345212-54-6P 345212-55-7P 345212-56-8P 345212-57-9P

345212-59-1P 345212-60-4P 345212-61-5P 345212-63-7P 345212-64-8P

345212-67-1P 345212-69-3P 345212-71-7P 345212-73-9P 345212-74-0P

345212-75-1P 345212-77-3P 345212-78-4P 345212-80-8P 345212-82-0P

345212-84-2P 345212-85-3P 345212-86-4P 345212-87-5P 345212-89-7P

345212-91-1P 345212-92-2P 345212-93-3P 345212-95-5P 345212-97-7P

RL: DEV (Device component use); NUU (Other use, unclassified); PNU (Preparation, unclassified); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(chem.-amplified neg.-working resist compn. for electron beams or x-rays contg. alkali-sol. resin of)

IT 3089-11-0P 161679-94-3P 162846-57-3P 244057-73-6P

RL: DEV (Device component use); MOA (Modifier or additive use); NUU (Other use, unclassified); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(chem.-amplified neg.-working resist compn. for electron beams or x-rays contg. crosslinking agent)

IT 17464-88-9 **153698-46-5**, Triphenylsulfonium

pentafluorobenzenesulfonate 157826-08-9 270564-02-8,

Tetramethylammonium pentafluorobenzenesulfonate

RL: DEV (Device component use); MOA (Modifier or additive use); NUU (Other use, unclassified); USES (Uses)

(synthesis of, as photoacid generator in chem. amplified neg.-working resist compn. for electron beams or x-rays)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Fuji Photo Film Co Ltd; EP 0823659 A 1998 HCPLUS

(2) Fuji Photo Film Co Ltd; EP 0874282 A 1998 HCPLUS

(3) Szmarda, C; US 5866299 A 1999 HCPLUS

IT **345212-28-4P 345212-29-5P 345212-30-8P**

345212-37-5P 345212-38-6P 345212-40-0P

RL: DEV (Device component use); NUU (Other use, unclassified); PNU
 (Preparation, unclassified); POF (Polymer in formulation); TEM (Technical
 or engineered material use); PREP (Preparation); USES (Uses)
 (chem.-amplified neg.-working resist compn. for
 electron beams or x-rays contg. alkali-sol. resin of)

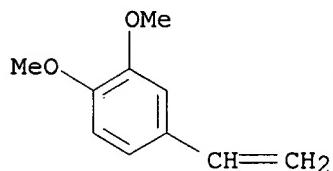
RN 345212-28-4 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 4-ethenyl-1,2-dimethoxybenzene (9CI) (CA
 INDEX NAME)

CM 1

CRN 6380-23-0

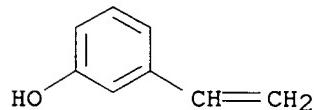
CMF C10 H12 O2



CM 2

CRN 620-18-8

CMF C8 H8 O



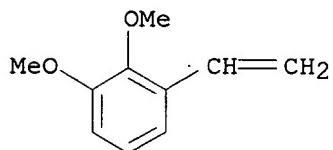
RN 345212-29-5 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 1-ethenyl-2,3-dimethoxybenzene (9CI) (CA
 INDEX NAME)

CM 1

CRN 17055-36-6

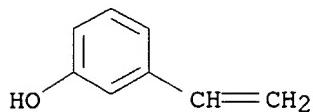
CMF C10 H12 O2



CM 2

CRN 620-18-8

CMF C8 H8 O



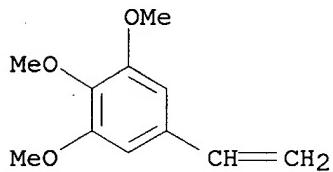
RN 345212-30-8 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-1,2,3-trimethoxybenzene (9CI)
(CA INDEX NAME)

CM 1

CRN 13400-02-7

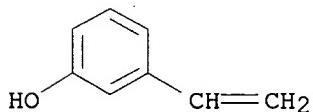
CMF C11 H14 O3



CM 2

CRN 620-18-8

CMF C8 H8 O



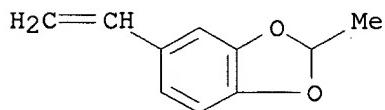
RN 345212-37-5 HCAPLUS

CN Phenol, 3-ethenyl-, polymer with 5-ethenyl-2-methyl-1,3-benzodioxole (9CI)
(CA INDEX NAME)

CM 1

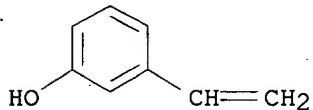
CRN 345212-31-9

CMF C10 H10 O2



CM 2

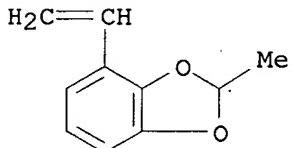
CRN 620-18-8
 CMF C8 H8 O



RN 345212-38-6 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with 4-ethenyl-2-methyl-1,3-benzodioxole (9CI)
 (CA INDEX NAME)

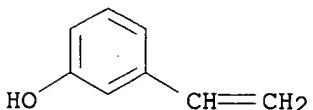
CM 1

CRN 345212-33-1
 CMF C10 H10 O2



CM 2

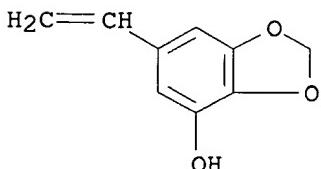
CRN 620-18-8
 CMF C8 H8 O



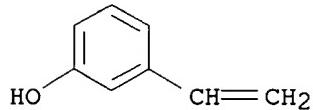
RN 345212-40-0 HCPLUS
 CN 1,3-Benzodioxol-4-ol, 6-ethenyl-, polymer with 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 345212-39-7
 CMF C9 H8 O3



CM 2

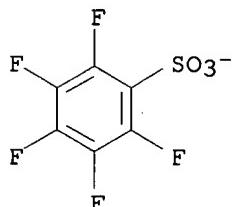
CRN 620-18-8
CMF C8 H8 O

IT 153698-46-5, Triphenylsulfonium pentafluorobenzenesulfonate
 RL: DEV (Device component use); MOA (Modifier or additive use); NUU (Other use, unclassified); USES (Uses)
 (synthesis of, as photoacid generator in chem. amplified neg
 -working resist compn. for electron beams or x-rays)

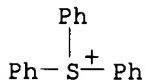
RN 153698-46-5 HCPLUS

CN Sulfonium, triphenyl-, salt with pentafluorobenzenesulfonic acid (1:1)
 (9CI) (CA INDEX NAME)

CM 1

CRN 46377-88-2
CMF C6 F5 O3 S

CM 2

CRN 18393-55-0
CMF C18 H15 S

L33 ANSWER 23 OF 25 HCPLUS COPYRIGHT 2003 ACS

AN 1998:627436 HCPLUS

DN 129:308520

TI Negative-working radiation-sensitive resin composition containing styrene polymer

IN Iwanaga, Shinichiro; Ohta, Yoshihisa; Mongaki, Kazumi

PA JSR Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 10 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-038
 ICS C08L025-18; G03F007-004; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10254135	A2	19980925	JP 1997-74716	19970312
PRAI	JP 1997-74716				

AB The title compn. contains (a) an alkali-sol. resin including hydroxystyrene (I)-styrene copolymers (70-95 mol% I content) and I-.alpha.-methylstyrene copolymers, (b) a radiation-sensitive acid generator including an onium salt compd., (c) a crosslinking agent of an alkoxyethylated glycoluril compd., and (d) a basic compd. The compn. is adaptable to alk. developing solns. with usual concns. and provides high resln. patterns with good profile and dimensional stability.

ST neg radiation sensitive resist styrene polymer; alkali sol hydroxystyrene styrene copolymer resist; methylstyrene styrene copolymer acid generator resist

IT Photoresists
 (UV, far-; neg.-working radiation-sensitive resin compn. contg. styrene polymer)

IT Resists
 (neg.-working radiation-sensitive; neg.-working radiation-sensitive resin compn. contg. styrene polymer)

IT 98-92-0, Nicotinic acid amide 102-82-9, Tri-n-butylamine 121-44-8,
 uses

RL: MOA (Modifier or additive use); USES (Uses)
 (basic compd.; neg.-working radiation-sensitive resin compn. contg. styrene polymer)

IT 15968-37-3 17464-88-9, Tetramethoxymethyl glycoluril
 RL: CAT (Catalyst use); USES (Uses)
 (crosslinking agent; neg.-working radiation-sensitive resin compn. contg. styrene polymer)

IT 24979-73-5 24979-74-6, p-Hydroxystyrene-styrene copolymer
 24979-75-7 127523-21-1, p-Hydroxystyrene-.alpha.-methylstyrene copolymer
 RL: TEM (Technical or engineered material use); USES (Uses)
 (neg.-working radiation-sensitive resin compn. contg. styrene polymer)

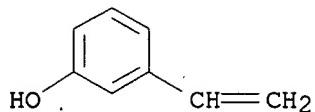
IT 66003-78-9, Triphenylsulfonium trifluoromethane sulfonate
 84563-54-2 149125-91-7 160481-39-0 214534-44-8
 RL: CAT (Catalyst use); USES (Uses)
 (radiation-sensitive acid generator; neg.-working radiation-sensitive resin compn. contg. styrene polymer)

IT 24979-73-5
 RL: TEM (Technical or engineered material use); USES (Uses)
 (neg.-working radiation-sensitive resin compn. contg. styrene polymer)

RN 24979-73-5 HCPLUS
 CN Phenol, 3-ethenyl-, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 620-18-8
 CMF C8 H8 O



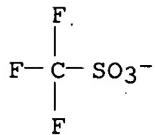
CM 2

CRN 100-42-5
CMF C₈ H₈ $\text{H}_2\text{C}=\text{CH}-\text{Ph}$

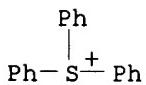
IT 66003-78-9, Triphenylsulfonium trifluoromethane sulfonate
84563-54-2 149125-91-7 214534-44-8
 RL: CAT (Catalyst use); USES (Uses)
 (radiation-sensitive acid generator; neg.-working radiation-sensitive
 resin compn. contg. styrene polymer)

RN 66003-78-9 HCAPLUS
 CN Sulfonium, triphenyl-, salt with trifluoromethanesulfonic acid (1:1) (9CI)
 (CA INDEX NAME)

CM 1

CRN 37181-39-8
CMF C F₃ O₃ S

CM 2

CRN 18393-55-0
CMF C₁₈ H₁₅ S

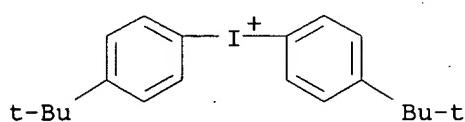
RN 84563-54-2 HCAPLUS
 CN Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with
 trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

WALKE 09/942768

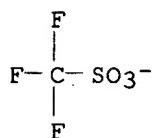
Page 215

CRN 61267-44-5
CMF C20 H26 I



CM 2

CRN 37181-39-8
CMF C F3 O3 S

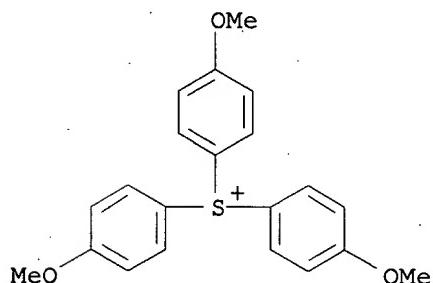


RN 149125-91-7 HCAPLUS

CN Sulfonium, tris(4-methoxyphenyl)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

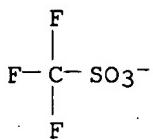
CM 1

CRN 59004-75-0
CMF C21 H21 O3 S



CM 2

CRN 37181-39-8
CMF C F3 O3 S



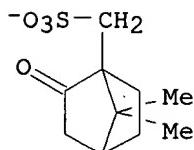
RN 214534-44-8 HCAPLUS

CN Iodonium, diphenyl-, salt with 7,7-dimethyl-2-oxobicyclo[2.2.1]heptane-1-methanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 55077-28-6

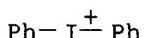
CMF C10 H15 O4 S



CM 2

CRN 10182-84-0

CMF C12 H10 I



L33 ANSWER 24 OF 25 HCAPLUS COPYRIGHT 2003 ACS

AN 1991:570718 HCAPLUS

DN 115:170718

TI Acid-catalyzed pinacol rearrangement: chemically amplified reverse polarity change

AU Sooriyakumaran, R.; Ito, Hiroshi; Mash, Eugene A.

CS East Fishkill Facil., IBM Gen. Technol. Div., Hopewell Junction, NY, 12533, USA

SO Proceedings of SPIE-The International Society for Optical Engineering (1991), 1466(Adv. Resist Technol. Process. 8), 419-28
CODEN: PSISDG; ISSN: 0277-786X

DT Journal

LA English

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB The reverse polarity change from a polar to a nonpolar state was successfully incorporated in the design of chem. amplification resists. The imaging mechanism is based on the pinacol-pinacolone rearrangement, wherein vic-diols (pinacols) are converted to ketones or aldehydes with photochem. generated acid as a catalyst. In addn. to a polymeric pinacol

which undergoes the rearrangement very cleanly in the solid state, aq. base developable three-component neg. deep-UV resist systems are described, which are based on phenolic resins, small pinacols, and triphenylsulfonium hexafluoroantimonate as the acid generator.

ST photoresist chem amplification pinacol rearrangement

IT **Resists**
(photo-, neg.-working, chem. amplification system for, based on acid-catalyzed with pinacol rearrangement)

IT Rearrangement
(pinacol, acid-catalyzed, photoresist system with neg. chem. amplification based on)

IT 466-37-5P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in acid-catalyzed rearrangement of benzopinacole, photoresist system with neg. chem. amplification in relation to)

IT 947-91-1P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in acid-catalyzed rearrangement of hydrobenzoin, photoresist system with neg. chem. amplification in relation to)

IT 770-85-4P, 3-Methyl-3-phenyl-2-butanone
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in acid-catalyzed rearrangement of methylphenylbutanediol, photoresist system with neg. chem. amplification in relation to)

IT 136474-76-5P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in rearrangement of polymeric pinacol, photoresist system with neg. chem. amplification in relation to)

IT 9016-83-5, Cresol-formaldehyde copolymer **24979-69-9** 24979-70-2
57840-38-7
RL: USES (Uses)
(photoresist system with neg. chem. amplification based on acid-catalyzed pinacol rearrangement contg.)

IT 136474-75-4P, Poly(3-methyl-2-(p-vinylphenyl)-2,3-butanediol)
RL: PREP (Preparation)
(prepn. and acid-catalyzed rearrangement of, photoresist with neg. chem. amplification in relation to)

IT 1493-13-6, Triflic acid
RL: USES (Uses)
(rearrangement of polymeric pinacol treated with, photoresist with neg. chem. amplification in relation to)

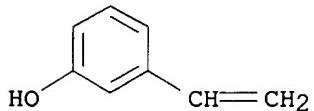
IT 464-72-2 579-43-1, meso-Hydrobenzoin 1671-73-4, 3-Methyl-2-phenyl-2,3-butanediol
RL: RCT (Reactant); RACT (Reactant or reagent)
(rearrangement of, lithog. characteristics of photoresist system with neg. chem. amplification contg.)

IT **24979-69-9 57840-38-7**
RL: USES (Uses)
(photoresist system with neg. chem. amplification based on acid-catalyzed pinacol rearrangement contg.)

RN 24979-69-9 HCAPLUS

CN Phenol, 3-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

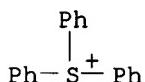
CRN 620-18-8
 CMF C8 H8 O



RN 57840-38-7 HCPLUS
 CN Sulfonium, triphenyl-, (OC-6-11)-hexafluoroantimonate(1-) (9CI) (CA INDEX
 NAME)

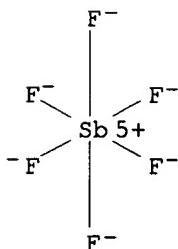
CM 1

CRN 18393-55-0
 CMF C18 H15 S



CM 2

CRN 17111-95-4
 CMF F6 Sb
 CCI CCS



L33 ANSWER 25 OF 25 HCPLUS COPYRIGHT 2003 ACS
 AN 1991:570717 HCPLUS
 DN 115:170717
 TI Negative chemical amplification resist systems based
 on poly(hydroxystyrene)s and N-substituted imides or aldehydes
 AU Ito, Hiroshi; Schildknecht, Klaas; Mash, Eugene A.
 CS Almaden Res. Cent., IBM Res. Div., San Jose, CA, 95120, USA
 SO Proceedings of SPIE-The International Society for Optical Engineering
 (1991), 1466(Adv. Resist Technol. Process. 8), 408-18
 CODEN: PSISDG; ISSN: 0277-786X
 DT Journal
 LA English
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reproductive Processes)

- AB Aq. base developable **neg.** deep-UV **resist** systems composed of phenolic resins, monofunctional latent electrophiles, and a sulfonium salt photochem. acid generator are described. This study was carried out to see whether attachment of a bulky substituent onto the phenolic group via C- or O-alkylation reduces the dissoln. rate of the phenolic resin in aq. base to provide neg. images even when no crosslinking is involved in the mechanism. The latent electrophiles selected are N-hydroxymethyl- and N-acetoxyethylimides as well as high-boiling aldehydes. The matrix resins are para-, meta-, and ortho-isomers of poly(vinylphenol) and copolymers of p-hydroxystyrene.
- ST **photoresist neg** chem amplification polyhydroxystyrene; imide deriv hydroxystyrene polymer photoresist; aldehyde deriv hydroxystyrene polymer photoresist; hydroxystyrene polymer imide aldehyde photoresist microlithog
- IT **Resists**
(photo-, **neg.**-working, chem. amplification system based on poly(hydroxystyrenes) and N-substituted imides or aldehydes)
- IT 23713-94-2P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in reaction of isopropylphenol with acetoxyethylsuccinimide, **photoresist** with **neg.** chem. amplification in relation to)
- IT 57840-38-7, Triphenylsulfonium hexafluoroantimonate
RL: USES (Uses)
(**photoresist** system with **neg.** chem. amplification based on poly(hydroxystyrene) derivs. and substituted imides or aldehydes and, mechanism of processes in)
- IT 112-31-2, Decylaldehyde
RL: USES (Uses)
(**photoresist** system with **neg.** chem. amplification contg. poly(hydroxystyrene) and photoacid generator and, characterization of)
- IT 123-11-5, p-Anisaldehyde, properties 134-96-3 621-59-0 623-27-8, Terephthalaldehyde 626-19-7, Isophthalaldehyde 643-79-8, 1,2-Benzenedicarboxaldehyde 947-91-1
RL: PRP (Properties)
(**photoresist** system with **neg.** chem. amplification contg. poly(hydroxystyrene) and photoacid generator and, characterization of)
- IT 118-29-6 5063-96-7, N-Hydroxymethylmaleimide 5146-68-9 5493-24-3, N-Acetoxyethylphthalimide 7450-68-2, N-Acetoxyethylmaleimide 21886-96-4
RL: USES (Uses)
(**photoresist** system with **neg.** chem. amplification contg. poly(hydroxystyrene) deriv. and triphenylsulfonium hexafluoroantimonate and, mechanism of processes in)
- IT 24979-69-9 24979-70-2 24980-18-5 110123-09-6, Hydroxyethyl methacrylate-p-hydroxystyrene polymer 135648-85-0, p-Hydroxystyrene-p-methoxystyrene copolymer
RL: USES (Uses)
(**photoresist** system with **neg.** chem. amplification contg. substituted imides or aldehydes and, mechanism of processes in)
- IT 25750-62-3
RL: USES (Uses)
(**photoresist** with **neg.** chem. amplification contg.)
- IT 25657-75-4 136474-77-6 136474-78-7 136474-79-8
RL: USES (Uses)

(**photoresist** with **neg.** chem. amplification in relation to)

IT 99-89-8, p-Isopropylphenol 1493-13-6, Trifluoromethane sulfonic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with N-substituted imides, **photoresist** with neg. chem. amplification in relation to)

IT 57840-38-7, Triphenylsulfonium hexafluoroantimonate
 RL: USES (Uses)

(**photoresist** system with **neg.** chem. amplification based on poly(hydroxystyrene) derivs. and substituted imides or aldehydes and, mechanism of processes in)

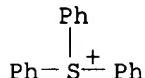
RN 57840-38-7 HCPLUS

CN Sulfonium, triphenyl-, (OC-6-11)-hexafluoroantimonate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 18393-55-0

CMF C18 H15 S

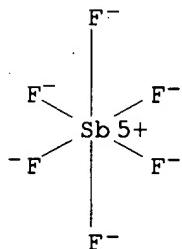


CM 2

CRN 17111-95-4

CMF F6 Sb

CCI CCS



IT 24979-69-9

RL: USES (Uses)

(**photoresist** system with **neg.** chem. amplification contg. substituted imides or aldehydes and, mechanism of processes in)

RN 24979-69-9 HCPLUS

CN Phenol, 3-ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 620-18-8

CMF C8 H8 O

WALKE 09/942768

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